

DOCUMENT RESUME

ED 204 147

SE 035 252

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TITLE Measuring Innovation Configurations: Procedures and Applications.
INSTITUTION Texas Univ., Austin. Research and Development Center for Teacher Education.
SPONS AGENCY National Inst. of Education (DHEW), Washington, D.C.
PUB DATE 81
NOTE 147p.
AVAILABLE FROM CBAM Project, R&D Center for Teacher Education, Education Annex 3.114, The University of Texas, Austin, TX 78711 (\$5.00).
EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS *Educational Innovation; Elementary Secondary Education; *Evaluation; *Evaluation Methods; *Guides; Higher Education; *Innovation; Instructional Innovation; Models; *Research Tools
IDENTIFIERS Concerns Based Adoption Model; *Innovation Configurations

ABSTRACT

Innovation Configurations (IC) represent the operational patterns of the innovation that results from implementation by different individuals in different contexts. This manual is intended as a practical tool for assessing IC, to promote understanding and facilitating of the change process. Various issues, questions, and tasks that must be considered in developing an IC checklist are addressed, with the document organized into the following sections: (1) Introduction; (2) Background: The Concerns-Based Adoption Model, Basic Terms and Definitions; (3) Some Preliminaries to Checklist Construction; (4) Procedure: How to Construct Checklists; (5) Checklist Formats; (6) Using Your Checklist: Data Collection; (7) Data Analysis; (8) Appendix: Case Studies; and (9) Appendix: Sample Interviews. This manual is written in a developmental sequence which addresses issues as the reader is likely to experience them. The concept of IC and IC checklists are viewed as important tools that allow the emphasis to be placed upon the concrete and more tangible operational forms of the innovation, thereby increasing the possibility of having reliable and valid information about use of the innovation. (EP)

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MEASURING INNOVATION CONFIGURATIONS: PROCEDURES AND APPLICATIONS

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The Research and Development Center for Teacher Education
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SECTION I: INTRODUCTION

The concept of Innovation Configurations has emerged out of research on the change process being conducted at the Texas R&D Center. The conceptual basis underlying this research is summarized in the Concerns-Based Adoption Model (CBAM) as described in Section II of this manual. This model and our research emphasize an understanding of the change process as it is experienced by individuals who are implementing innovations within an organizational context. Most recently we have turned our attention toward defining and measuring the innovation itself in an attempt to enlarge our understanding of the change process. We feel that understanding what happens to an innovation is important to those who implement a new program as well as for those who facilitate, evaluate, and make policy recommendations about the innovation.

Innovation Configurations (IC), as we have conceptualized it, represent the operational patterns of the innovation that result from implementation by different individuals in different contexts. In the course of early research we conducted with different innovations, we noted that individuals used parts of an innovation in different ways. When these parts were put together, a number of different patterns emerged, each characterizing a different use of the innovation. We called these patterns Innovation Configurations. The means of representing the parts of the innovation and variations in the use of these parts, such that patterns may be derived, is called an Innovation Configuration Checklist.

In this manual we share with the reader our present understandings of some of the issues which must be addressed in assessing those patterns. Once more familiar with the concept, the reader may find that they wish to focus more closely on particular parts of the manual, depending on their planned application of Innovation Configurations. For example, a principal who is looking for

a straight forward means to evaluate the use of a program in his/her school may not be interested in the complexities of Data Analysis, Section VII. Conversely, a State Facilitator researching the use of early childhood education programs, might want to apply some of the special analysis procedures described in that section.

Assessing Innovation Configurations, on whatever scale, is one way of understanding and facilitating the change process. This manual is intended as a practical tool to aid in that purpose. For the conceptual work that is behind this effort the reader is referred to the paper by Hall and Loucks, (1981). Our studies have shown Innovation Configurations to be applicable to many types of activities-- including research, evaluation, staff development, and dissemination. The Appendices of the manual include examples of some of the different applications in which we have used the concept.

Application of Innovation Configurations

Examples of use of Innovation Configurations cover a broad range: in a dissemination context, knowledge about Innovation Configurations can provide concrete information about a new program or practice to people who will actually be using the innovation or whose lives might be affected in some way by the innovation. As an illustration, it is possible to characterize the different parts or components of a new approach to reading in terms of the materials teachers will use, the strategies they will practice, the management tools they will handle, the activities students might be engaged in, and the support facilities that the school and/or district will be able to provide the teachers. As Innovation Configurations describe the operational patterns of the innovation, information about components or the basic elements of the innovation can complement understanding of the philosophy behind the program, thus allowing teachers to envision what will be expected of them.

In an evaluation context, information about Innovation Configurations can be used to answer questions such as whether the innovation has been fully implemented, what the innovation looks like one or more years after adoption, and what relationship the innovation has to student or other intended outcomes. Such information may provide a baseline for assessing further needs, for determining bottlenecks to broader implementation, for responding to funding sources, and for developing inservices or other staff development activities.

In terms of staff development activities, Innovation Configurations provide a record of what teachers actually do, thereby providing clues as to how inservices might be planned to modify, complement, or change their current practices. For example, if using a program's recommended record keeping system is related to desired outcomes and it is found that teachers are having difficulty in its use, then a workshop could be planned to provide practice with the system, to explain its purpose, and to resolve what obstacles are restricting its use. Further, if it were found that students who kept their own records did better on unit tests, then a closer look at the relationship of student records to outcomes could be explored and work with teachers planned accordingly.

Finally, in a research context, information about innovation components and Configurations can be used to determine the constancy of treatment across individuals in the treatment group and to assess the extent to which the treatment is truly absent from the control group. Specification of the treatment and its placement in the study context is a crucial first step in determining its relative influence.

A Road Map To This Manual

This manual addresses various issues, questions, and tasks that one must consider in the process of developing an Innovation Configuration Checklist,

collecting data to complete the Checklist, and analyzing these data. We have attempted to organize the parts of the manual in a sequence that ranges from historical background to general preliminary questions, to procedural questions, to data collection questions, ending with analysis questions. The manual is divided into the following sections:

- I: Introduction
- II: Background: The Concerns-Based Adoption Model, Basic Terms and Definitions
- III: Some Preliminaries to Checklist Construction
- IV: Procedure: How to Construct Checklists
- V: Checklist Formats
- VI: Using Your Checklist: Data Collection
- VII: Data Analysis
- VIII: Appendix: Case Studies
- IX: Appendix: Sample Interviews

Very generally, Section II of the manual presents an overview of the Concerns-Based Adoption Model in order to place the concept of Innovation Configurations within a larger framework of the change process. It also provides a history of the development of the concept of Innovation Configurations and definitions of terms used throughout the manual. Section III addresses some of the issues and questions which are of concern before beginning Checklist construction. Section IV continues with the procedure for identifying Configuration components, component variations, and developing the Innovation Configuration Checklist. Section V delves further into the details of Checklist formats. In Section VI, alternative approaches to data collection and the characteristics of these different collection strategies are explored. Section VII examines some of the issues around Checklist data analysis. The manual concludes with a set

of appendices which show various contexts in which Innovation Configurations have been used, different Checklists as developed for specific applications, and sample interviews of innovation developers and users.

Before concluding this section, there are several considerations that need to be mentioned, some of which will be mentioned again at other points. All should be considered when working with Innovation Configurations.

Considerations

1. The very first step in developing an Innovation Configuration Checklist is determining what you wish to do with the data. That decision will automatically rule in or out various procedures and issues that must be resolved. Deciding how the Checklist and data are to be used will greatly simplify both Checklist construction and data collection.

2. The task can look complex. However, each step flows logically from the preceding one. In addition, since we are emphasizing the operational components of the innovation, development and use of the Checklist and Configuration data become much more concrete and tangible than would be possible by using other perspectives.

3. One issue that will come up continually concerns the frame of reference surrounding the development of the Innovation Configuration Checklist and how to determine a minimal criteria for the use of the innovation represented by the Checklist. One logical perspective is to assume that of the developer. This, however, is not the only perspective. Information about the characteristics of the innovation can come from a policy maker, change facilitator, or user. Depending on the reason for checklist development, it may be desirable to combine perspectives to get a broader picture of the possible variations in use.

4. Another important issue to remember before beginning work with Innovation Configurations and Checklists is that while this manual attempts to present a procedure for quantifying a certain type of information, an innovation in use is still dependent on the human element, and as such not easily reduced to paper and pencil measures. A further problem is the accuracy of these measures given the reality of the innovation in a specific context. We feel that we have developed a procedure which allows such information to be approached successfully, but not without adding some complexities and careful attention to the steps that must be taken.

Final Notes

In writing this manual we have followed a developmental sequence which addresses issues as you are likely to experience them. We encourage you to read

through the entire manual quickly before focusing in-depth on the first steps. In general, the manual offers educational innovations as examples; however, we believe that the concept applies to non-educational settings as well. We also feel it can be applied to more elaborate innovations than those which are used here for ease of illustration. Organizational level innovations or innovational bundles are examples of more complex innovations. We encourage you to be experimental in Checklist development once you feel familiar with the procedures and concepts. We remind you of the human element contained not only within the users involved in the innovation, but also in researchers, facilitators, and analysts.

We see Innovation Configurations as an important tool in the description and measurement of certain types of innovations in certain contexts. While it is a flexible tool within those boundaries, you may find that a well-rounded picture of the impact of an innovation includes assessment of other parts of the context. You may want to know not only what variations of the innovation users are involved with, but also how users or administrators are affected by use and implementation. Developing such a complete picture could entail the application of such measures as Levels of Use interviewing and Stages of Concern profiles, as well as supplemental observations.

Innovation Configurations answer the questions "What is the innovation?" and "How is it being used?". The concept of Innovation Configurations and the use of Innovation Configuration Checklists allow the emphasis to be placed upon the concrete and more tangible operational forms of the innovation thereby increasing the possibility of having reliable and valid information about use of the innovation.

SECTION II: BACKGROUND

The Larger Picture: The Concerns-Based Adoption Model

The conceptual basis for the research on the change process at the Texas R&D Center has been the Concerns-Based Adoption Model originally proposed in 1973 (Hall, Wallace & Dossett). Since that time research has focused both on developing procedures and studies which would lead to initial verification of various aspects of the model, and on increasing the utility of the model for change facilitators. Extensive studies have resulted in publications on several major dimensions of the model, especially the concept of Stages of Concern About the Innovation (Hall & Rutherford, 1976), Levels of Use of the Innovation (Hall, Loucks, Rutherford & Newlove, 1975), Innovation Configurations (Hall & Loucks, 1978), and the Intervention Taxonomy (Hall, Zigarmi & Hord, 1979). Neither these particular dimensions nor those implied in the rest of the model can make the extremely complex phenomenon of change clear and simple. Yet, the concepts and dimensions have proven to be of assistance to change facilitators, have offered a viable framework for understanding, facilitating and evaluating change efforts, and have made possible the posing of new types of research questions and examinations of policy.

As has been described in earlier CBAM publications, there are several basic premises underlying the Concerns-Based Adoption Model. These include: (1) change is a process, not an event; (2) the understanding of the change process in organizations requires an understanding of what happens to individuals as they are involved in change; (3) for the individual, change is a highly personal experience; (4) for the individual, change entails developmental growth in terms of feelings about and skill in using the innovation; (5) information about the

change process collected on an ongoing basis can be used to facilitate the management and implementation of the change process.

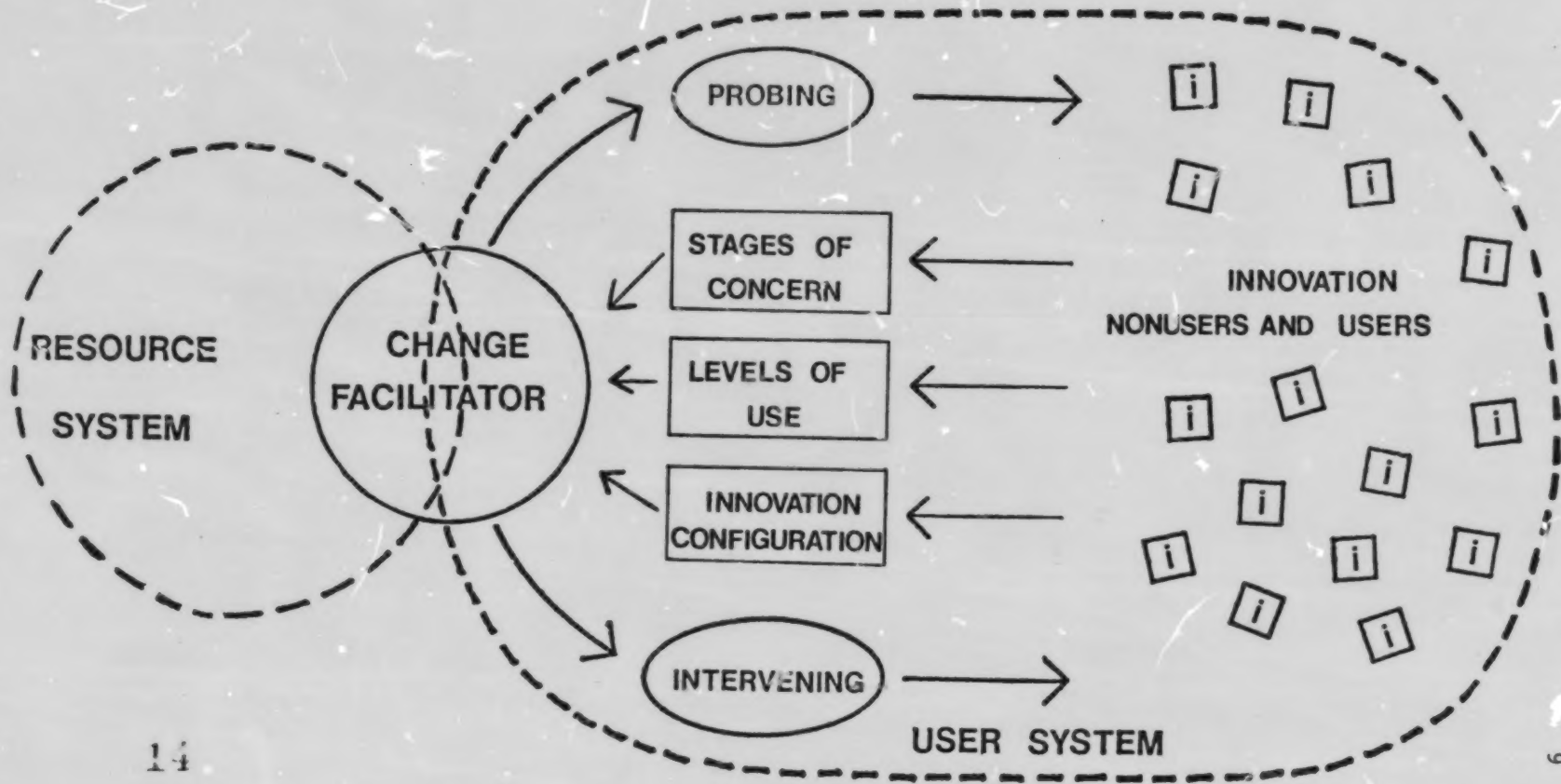
The diagram shown in Figure 1 is one representation of the overall Concerns-Based Adoption Model. All of the dimensions and various interactions proposed in the figure are meant to acknowledge that change is a process and that the facilitating of change entails continuous and systemic interactions. In this figure the concepts of Stages of Concern, Levels of Use and Innovation Configurations represent the key diagnostic variables that a change facilitator (anyone responsible for assisting users in implementing an innovation) must be constantly monitoring. As a change effort unfolds, the change facilitator should be constantly probing, employing various techniques with the users and nonusers of the innovation in order to assess their concerns, their use of and their configuration of the innovation. Based on these diagnostic data, the change facilitator is able to "intervene" by delivering appropriate resources and technical assistance which would facilitate the change effort. As the change facilitator works with individual users, s/he must anticipate that the effects of interventions are likely to be systemic: i.e., that an intervention in one sub-system of the organization is likely to have effects on other sub-systems, or on the organization as a whole. Further, a change facilitator must keep in mind the totality of the change effort without losing sight of the individual.

Innovation Configurations in the CBAM Model

The concepts of Stages of Concern and Levels of Use focus on the individual users of an innovation. Stages of Concern addresses the person's perceptions, feelings and motivations relative to the innovation, while Levels of Use describes behaviorally how they are approaching use. Neither one of the concepts

Figure 1:

THE CONCERNS-BASED ADOPTION MODEL



specifically addresses what the innovation is. This is where the concept of Innovation Configurations comes into play.

In the original studies designed to verify the existence of the different Levels of Use, it was necessary to distinguish between users and nonusers of the innovation. Although in theory this distinction seems fairly obvious, in practice it was not so simple. We quickly observed that persons who claimed not to be using an innovation were actually doing many of the same things that persons who claimed to be users were doing. Further, many different persons who claimed to be users were not always using the same thing (Hall & Loucks, 1977). In our teaming study, for example, we found teachers who would claim to be teaming when they were on two-member teams that met once a week for planning and kept all of their own children (Rutherford, 1977). In another school we found teachers who reported to be teaming having five- and six-member teams with daily meetings, with children in constant movement from teacher to teacher. All were "users," but not users of the same operational form of the innovation.

Similar findings were revealed in our other studies, including college faculty who were users and nonusers of instructional modules (Hall & Loucks, 1977). Not only between campuses, but even within the same campus, we would find extreme variations in what was being called a module. These experiences led us to setting up what we initially called minimum criteria for being a user. These criteria would specify the minimum parts or components of the innovation which a person would have to be using in order to be classified as a user. Depending upon the objectives of the study underway the minimum-use criteria could be quite lenient or quite restrictive. Out of this experience of defining minimum use, the concept of Innovation Configurations began to emerge.

From defining minimum-use criteria, we soon were asking "What is the innovation or treatment that is being used?" All too frequently, this question had

been answered by simply providing the name of the innovation or treatment procedure. Writings about innovations lacked concrete descriptions of what users do when implementing them. The thrust to answer the larger question, "what is the innovation?" began to focus on the behavioral characteristics of innovations. We attempted to break the innovation itself into discrete parts which could be operationally described. These parts or components were considered critical for acceptable implementation of the innovation. As individuals used the parts in different ways, a number of different patterns, or configurations of use, came to light.

From this perspective implementation requirements, outcomes associated with the innovation, and perceived attributes of the innovation are not synonymous with the innovation. Rather, emphasis is placed upon what people are actually doing, and with what materials, behaviors, and processes, as they "use" an innovation. The focus is on what can be observed when the innovation is in use.

The decision to focus on describing the innovation in "action" terms led way to the development of a process for identifying and measuring innovation components and Configurations. The remainder of this manual outlines this process. Before proceeding, we define below the terms we use as we identify components, construct component checklists, and develop Innovation Configurations.

Basic Terms and Definitions

The following terms are used in specific ways in our work on innovations:

IMPLEMENTATION REQUIREMENTS

COMPONENT (critical and related)

DIMENSIONS

VARIATIONS

CHECKLIST

INNOVATION CONFIGURATION

We use the term COMPONENT to mean the major features of an innovation. With instructional innovations components are usually either materials, teacher behaviors, or student activities. CRITICAL components are those which must be used if the innovation is to be considered implemented. RELATED components are those which are not critical or essential to the innovation but are recommended by the developer or may help to describe the innovation in use. Designation of a component as critical or related can be done by a developer, change facilitator, user, or evaluator. Interestingly, the designation may change during the life cycle of the innovation. Note that the case studies in Section VIII display checklists in which some components are designated 'critical' and some 'related.'

Components are distinguishable from IMPLEMENTATION REQUIREMENTS. The latter are the support services and materials needed by individual users to implement the innovation. They are distinct from the behaviors of users as they use the innovation. Implementation requirements may be the monies allocated by a district for a remedial reading program, the physical facilities in which the program is housed, the training and/or inservice required of users or the equipment and materials assigned to individual or groups of users. They are services and materials which may be necessary for use; they are not behaviors that describe the innovation as it is used.

A component can be made up of 1 or more aspects, or DIMENSIONS. For

example, the following component has 2 dimensions:

Figure 2

Component: Teaching of Objectives

- (1) Teaches objectives in order.
- (2) Teaches objectives out of order.
- (3) Does not teach objectives.

The first dimension refers to the teaching, or not, of objectives. The second dimension refers to the teaching in order, or not, of objectives. The dimensions shown in this component have been combined into three VARIATIONS, reflecting the possible ways that a teacher might be observed teaching objectives in his/her classroom.

A more complex component with more dimensions is illustrated below.

Figure 3

Component: Time Spent on Individualized Instruction

- (1) Each student having below average performance in any modality receives 20-30 minutes daily, (4 days minimum) of instruction individualized to special modality areas.
- (2) Each student having below average performance in any modality receives 20 minutes of individualized instruction in the low modality given 2-3 times per week on a regular basis.
- (3) Students having below average performance in any modality receives less than 20 minutes per day is devoted to individualized instruction in the low modality areas.
- (4) Individualized instruction given occasionally when needed is obvious.
- (5) No individualized instruction.

Note that this component varies along a number of dimensions:

- (a) whether or not individualized instruction is given
- (b) number of times a week instruction is given
- (c) how many minutes daily instruction is given
- (d) the content of instruction--as determined by need

Note that the dimensions contained within the component have been combined to form 5 variations which represent the different ways in which the component is operationalized. In this component, variation 2 differs from variation 1 in that the amount of time given to instruction is shorter and instruction is given 2-3 times a week rather than at least 4 days a week. More information about dimensions, variations, and component characteristics can be found in the Checklist Formats section of this manual.

A CHECKLIST is the key tool we use to enumerate components and their variations. On an Innovation Configuration Checklist the components of the innovation are listed along with the variations most likely to be present when each component is in place. A simple example of Components and Component variations is shown in the checklist for Continuous Progress Mathematics where the components of the innovation were designated as:

1. Instructional materials used
2. Grouping
3. Testing

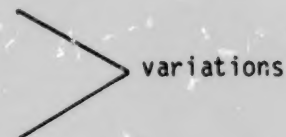
For each of these components a series of variations could be identified as the Innovation Configuration Checklist was piloted and refined. With the field testing the variations listed on the checklist are re-worded to make them mutually exclusive. The checklist as developed included the following variations.

Figure 4

CHECKLIST: Continuous Progress Math

COMPONENT 1. Instructional materials

- a. program materials only
- b. program materials plus basic text
- c. text only
- d. teacher-made only

COMPONENT 2. Grouping

- a. large heterogeneous group
- b. large homogeneous group
- c. small groups
- d. completely individualized

COMPONENT 3. Testing

- a. testing done once every six weeks but nothing done with test results.
- b. testing done weekly with test results feedback to students
- c. each student tests themselves as they complete each objective

Following data collection a configuration checklist is completed for each user. INNOVATION CONFIGURATIONS are then constructed from the set of completed checklists. As we have mentioned, configurations are the operational patterns of the innovation that result from use of different component variations. In the example above one user of Continuous Progress Math was found to be using program materials plus the basic text (component 1, variation b), teaching to a large homogeneous group (component 2, variation b), with testing done every six weeks but nothing done with test results (component 3, variation a). Component 1, variation b, component 2, variation b, component 3, variation a, or BBA represents this user's Configuration. Any other combination of component variations would represent a second Configuration and so forth. Dominant Configurations can be identified by looking across samples to identify the Configurations most frequently observed. These Configurations can be used descriptively or as

variations to form Configurations is discussed further in the Data Analysis Section.

A brief review of definitions as described in this section is shown in Figure 5.

Some Definitions**CONFIGURATIONS:**

The operational patterns of the innovation that result from selection and use of different innovation component variations.

COMPONENTS:

The major features of an innovation. Components are usually either teacher behaviors, student activities, or how materials are used.

CRITICAL COMPONENTS are those which must be used if the innovation is to be considered implemented.

RELATED COMPONENTS are those which are not required or critical.

Which components are designated critical and related depends on who is doing the defining: the developer, a change facilitator, user, or evaluator.

VARIATIONS:

The different ways in which the components can be operationalized, e.g., ways in which users are actually using parts of the innovation -- program materials, ways of grouping, approach to content. Components may be present or absent, e.g., bilingual teacher or no bilingual teacher.

DIMENSIONS:

Aspects of a component. Dimensions may be combined or used alone to make component VARIATIONS. A dimension is one aspect along which a component may vary, e.g., keeping records for individuals matched to program guide versus keeping records for individual not matched to guide versus not keeping records.

IMPLEMENTATION REQUIREMENTS:

The training, support services, and materials needed by individual users to implement an innovation. These would have to be in place for use of the innovation to proceed.

DECISION POINT:

A judgement made by the developer to distinguish between different components and variations. Decision points are used to classify different types of implementation, or use from the developer's viewpoint, e.g., IDEAL use where all critical components are present with the developer's preferred variations, to ACCEPTABLE use, to UNACCEPTABLE use where components are present with unacceptable variations.

SECTION III: SOME PRELIMINARIES TO CHECKLIST CONSTRUCTION

The starting point of checklist construction is the consideration and clarification of how the information on a checklist will be used. Once this is done, the actual process of checklist construction is fairly straightforward. The procedure involved in constructing the checklist will be discussed in Section IV. In this Section we want to elaborate on several points that are important to any work with checklists: why develop a checklist; what perspective to reflect in writing the checklist; what is the relation of the innovation to the checklist; how broad in scope should a checklist be; how much detail should a checklist contain; how long should a checklist be for best use; how best to match the checklist to the needs of the data collection.

Why Develop the Checklist?

Before developing a checklist, it must be clear what questions will be answered of the data collected. The checklist may be used to answer questions like:

What exactly are users doing with the innovation?

To what extent are users using the developer's comments?

These are two different questions, which result in different kinds of checklists. Both could yield information useful to staff developers, evaluators, or researchers.

We first want to discuss what a checklist focused on each question might look like. Then, we consider a "hybrid" checklist useful to answer both questions.

What Exactly Are Users Doing With the Innovation?

This question is purely descriptive; it is non-evaluative. It represents the user perspective and places no values on one variation or another. A checklist to respond to such a question lists components that users consider part of the innovation, and typical variations of those components.

To What Extent Are Users Using the Developer's Components?

This question is evaluative; it compares what a user is doing to what the developer intended for the user to do. It represents the developer's perspective. A checklist developed to answer such a question would describe components nominated by the developer. Variations would represent what would be acceptable to the developer, and what would not.

Figure 6 provides simple examples of how the same component operationalized for each checklist might differ.

Figure 6

Component: Materials (User Perspective)

1	2	3
Uses program materials	Uses text	Uses teacher-made materials

Component: Materials (Fidelity Perspective)

1	2
Uses program materials	Doesn't use program materials
Acceptable	Unacceptable

A hybrid checklist, combining the user and developer (fidelity) perspectives will allow the collection of data that will respond to both questions above: what is the user doing and how close is that to the developer's innovation? A component from such a checklist might look like Figure 7.

Figure 7

Component: Materials (Mixed Perspective)

1	2	3	4	5
Uses only program materials	Uses program materials, plus text	Uses program materials, plus teacher-made	Uses only text	Uses only teacher- made
Ideal	Acceptable		Unacceptable	

Selecting a Perspective

In developing the checklist, the question remains as to who should specify what the innovation is. Who should say when a particular practice is representative of the innovation and when it is not? The developer, the administration at an adopting site, the funding agency, the evaluators, and the actual users all have a perspective, based on their experience, of what the innovation is and what it looks like in actual practice. Deciding on which perspective to take is not a clear cut issue. The purported use of the checklist and the role of the person designing the checklist will, in the end, most likely determine whose view predominates. Hopefully, consensus of what the innovation is can be reflected on the checklist.

The Importance of Multiple Perspectives

In our experience, checklist construction usually begins with some notion of what constitutes minimal use as derived from the developer. From there, testing and amplification of the original definition occurs through an iterative process of going from user to developer to user. In the next section we will discuss the steps involved in the general development of a checklist. Without testing one's original notion (or those of the developer) about implementation with users, we might fail to recognize important nuances in the behaviors and activities described by the developer when we go out to measure if and how a

component exists. Further, we might not be able to interpret the information on the checklist without a grounding in the reality and language of users. In our experience, developers can often be too close to an innovation to see things from a teacher's perspective. Teachers, on the other hand, are immersed in their own implementation activities and may not be familiar with different variations, or even all the components of the innovation. Moreover, they often lack contact and familiarity with other users of the innovation and therefore cannot portray the differences exhibited by other teachers. Both the developer's perspective and the perspectives of several users are needed to reflect the behaviors and activities as originally designed as well as their interpretation in a school setting. Frequent discussion, observation and interaction with different persons involved with the innovation is necessary to reflect the multiple viewpoints.

The issue of perspective is not one of "whose," but how to blend the multiple perspective and realities of what an innovation is. In practical terms, the issues often boil down to the amount of energy and resources of the person constructing the checklist and the amount of time and money one has to interact with all parties involved in the implementation of an innovation. It further depends on who is funding the data collection process, and why. In our opinion, no matter for what purpose the information is needed, it is important (1) to keep in mind that different persons involved in the implementation process have different interpretations of what the innovation is, and (2) to acknowledge where one's own sympathies, biases, and choices lie when constructing a checklist.

Prescriptiveness: Its Relationship To Perspective

One concept tied to perspective is that of prescriptiveness. The prescriptiveness of an innovation can additionally affect the length and detail of a checklist. By prescriptiveness, we mean the degree to which users are expected to implement the innovation in pre-specified ways, without adaptation, or adaptation within narrow limits. Some innovations specify that users adopt specific behaviors, activities, materials, strategies, etc. These are more prescriptive than innovations which do not specify particular behaviors, activities, or strategies, and intentionally leave discretion to the user to select among a range of activities, or to create their own.

Innovations that are prescriptive lend themselves to labeling component variations as "acceptable" or "unacceptable" from someone's point of view. The developer, a change agent, the funding agency, or anyone responsible for the innovation in some way could specify what is acceptable. Implicit in checklists written in this way is what we call a "fidelity" perspective. In other words, component variations are being matched to some "ideal" as established by the person responsible for the innovation. In being "prescriptive" the developer is demanding close adherence to this ideal. A simplistic example of a component written prescriptively is shown in the second component of Figure 6 (materials: fidelity perspective).

Innovations that leave discretion to the individual user or adoption site or even explicitly encourage user variation and change are less likely to specify behaviors in the same way. The checklist is therefore less likely to be able to be divided into acceptable and unacceptable variations. With low prescription, the checklist is a descriptive tool of what users are doing and does not elaborate standards a priori against which to compare user behaviors.

Prescriptiveness: Amount of Detail

Innovations that are prescriptive may have a great deal of detail as the developer specifies the length of time a material should be used, what portions of the material, with whom, and with what type of student-teacher interaction. Further, they may have fewer variations as little choice is left to the individual user. Increased prescriptiveness may mean increased numbers of components on a checklist due to specificity of each item. Also, it is likely to mean fewer "acceptable" variations from the ideal.

Scope: How Many Checklists? How Much Detail?

Some innovations have a broader scope than others. By scope, we mean the pervasiveness or extensiveness of the innovation in a school. A remedial reading program, occurring 3 times a week for low achieving readers in grades 1-3 in a single school is less extensive than a high school reading curriculum for all students. Both of these are less extensive, or pervasive, than an alternative high school that encompasses all aspects of the student's life, requires new staff, buildings, and equipment. In fact the alternative high school is more like a bundle of innovations, with several smaller innovations wrapped into one program. Each subject area could be considered an innovation in itself.

In the case of the remedial reading program, a single checklist for teachers of all three grade levels may be appropriate. It may be, however, that variations within a component may differ depending on the grade level, and need to be marked as such. The Early Prevention of School Failure checklist, an early childhood innovative program shown in the Appendix, discriminates between component variations acceptable to grade one which are not acceptable in kindergarten. It is further possible that the requirement for each grade level be sufficiently different to require separate checklists for each grade.

In the case of the entire alternative high school several routes are possible. It may be adequate to consider the entire bundle in a single checklist. In this case, detail and specificity are lost to the goals of representing an overall gestalt of the innovation. In other instances, content areas within the larger innovation, such as creative arts or writing might be considered separately and a checklist developed for each area. In either case, a checklist representing the alternative high school or even one aspect of that high school will probably have less detail and specificity than the checklist describing a remedial reading program for low achieving first through third graders. In the end, the amount or specificity of detail will depend on how the Innovation Configuration Checklist data are to be used. A checklist to be used in a summative evaluation may require more detail, for example, than would that needed for a statewide survey of high school program offerings.

Scope: How Long a Checklist?

In general, the length of the checklist is related to (1) the use to which the checklist is to be applied and (2) what the checklist describes. If the checklist is to be used as a part of an interview there is a limit on components due to user exhaustion. The checklist may also be used as a tool to record all the facets of a more complex innovation, even though specific individuals may be interviewed for only parts of the innovation, or for their role within the total innovation bundle.

An innovation with broader scope is likely to affect more than one type of user. For example, in the alternative high school, counselors, academic teachers, vocational teachers, and administrators are likely to be involved, and the role of each will vary. If the checklist is concerned solely with the counseling aspect of the alternative high school, then it is likely to focus on the be-

haviors and activities of the counselor. These then become a separate checklist. However, if the checklist attempts to capture all aspects of the alternative high school, then some characterizations of each role are necessary. In this case, multiple-user roles must be represented on a checklist that describes the entire innovation. Depending on how the checklist is to be used, both checklist construction and data analysis of large innovations can become quite complex. In an effort to characterize the different roles, the number of components on a checklist describing an innovation of broad scope may be more than the number of components on a checklist representing an innovation of narrow scope. Problems involved in the analysis of checklists involving innovation bundles, or innovations of broad scope, are discussed further in Section VII, Data Analysis.

It is important to reiterate that the checklist is a behaviorally oriented description of an innovation. The innovation may be large or small, simple or complex. The checklist is designed to capture the essence of the innovation in action terms such that the researcher, teacher, evaluator, or administrator is able to match components and component variations to actual behaviors and activities. We proceed to checklist construction in the next section.

SECTION IV: PROCEDURE: HOW TO CONSTRUCT CHECKLISTS

Once decisions have been made as to what perspective is to be taken, and what the checklist is to be used for, the actual process of checklist development can begin. The following section outlines the six steps involved in constructing the checklist. Throughout the discussion it will be helpful to refer to the flow chart summarizing the general procedure for identifying Innovation Configurations contained in Figure 8.

Step 1: Identifying Innovation Components

The first step requires the identification of components, the major operational features of an innovation. For instructional innovations these are usually either materials, teacher behaviors or student activities. Identification of components is usually done by first reading as much descriptive material about the program as is available. Then the developer and/or program facilitator are interviewed. (See Appendix for a sample interview.) Sometimes developers are the teachers using the program, sometimes they are the district level coordinators. Often they are publishing companies or other development agencies. When it is possible to interview the program developer(s), the following questions help to delineate components. These questions are suggestions and can be altered depending on the situation.

1. *Would you describe for me (name of innovation)?*

This question is intended to get a "feel" for the innovation, including the developer's mind set, the language s/he uses to talk about the innovation and what the developer sees as the important focus of the innovation.

As the developer begins to carve out components in his/her general description, you can probe on each component:

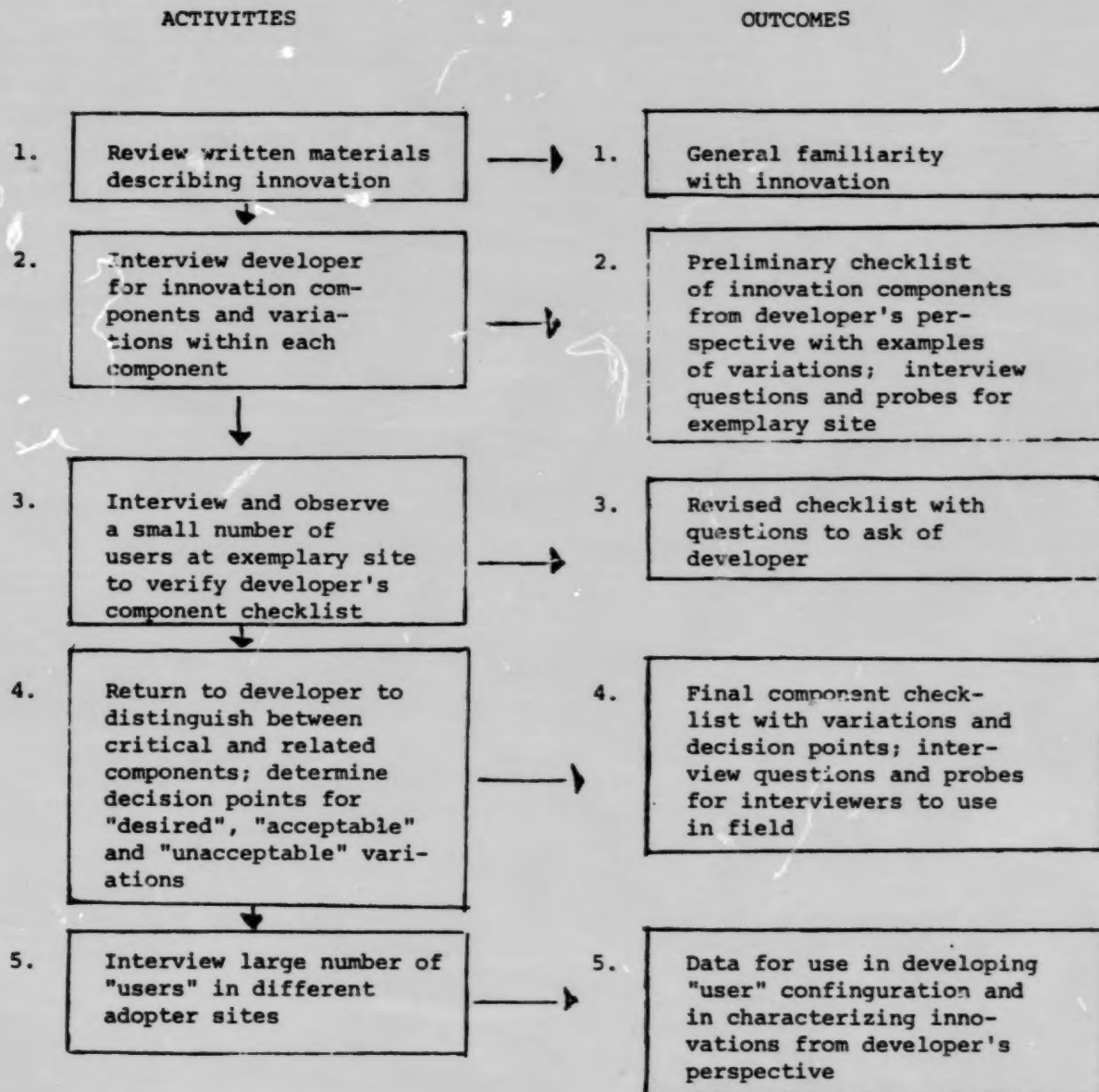
What would (name of component) look like in the classroom?

What do teachers do?

What do students do?

How do students and teachers interact?

PROCEDURE FOR IDENTIFYING INNOVATION COMPONENTS, VARIATIONS AND CONFIGURATIONS



2. *What would I see in a classroom where the innovation was in use?*

Ask the user to describe a typical sequence of activities over a week in time or to pick a classroom and describe what goes on in it.

3. *What do you consider the most essential components of the innovation?*

Be sure to distinguish implementation requirements from components. The developer may have already named some components in questions 1 and 2. Further information can be probed by questions such as:

Tell me some more about (name of component).

You mentioned that (x, y, z...) are important parts of your innovation.

What are some other parts?

You might also ask about printed materials on the innovation that you have read before the interview.

4. In order to get at how the components might be exhibited in the classroom, take each component named by the developer and ask:

What if (component) was not going exactly like (description above)?

What are some other ways it might look?

Can you give me a version of component (x, y, z...) that would be unacceptable to you?

How would you like this component to be used in the classroom?

How is it most typically used?

The objective of this exercise is the establishment of the basic components of the innovation and some component variations. Not all of the questions above may be necessary depending on the user's response. Often someone other than the developer is responsible for facilitating use of the innovation -- a central office curriculum coordinator, a staff developer, or a consultant. It is useful to ask this person the same questions. Specific questions asked of a developer, facilitator, or any other person connected with the innovation may vary according to your judgement on their involvement with the innovation. What is important is that you get a clear picture of what constitutes the innovation as key persons would like it to be used by teachers or others. The outcome from Step 1 is a tentative list of components and a few variations for each component.

Step 2: Identifying Additional Components and Variations

Next, it is important to interview some users and to observe the innovation in use. Whenever possible, the users should be selected to represent a wide range of users of the innovation so that many variations will be noted. Don't just observe successful users of the innovation, but aim for a variety of users. Some useful interview questions for users are:

1. *Would you describe the innovation for me?*
2. *What would I see if I visited your classroom while you were using the innovation?*
3. *What would you be doing in the classroom?*
4. *What would your students be doing?*
5. *Probe use of each component identified in Step 1. For example, How do you keep records?*
6. *Have you seen other teachers doing this (Component) differently?*

Step 2 results in an expanded list of components and variations within each. A checklist is emerging.

Step 3: Refinement of checklist

If possible, it is important to return to the developer to discuss what you have seen while interviewing users in Step 2. A developer can help explain different activities and processes you might have seen in your observations that were not discussed in your first talk and can expand upon other points. Returning to the developer at this point helps to (1) clarify which are the most important components, (2) verify variations, (3) clarify discrepancies between developer and user viewpoints, (4) decide what language to use when describing an activity or behavior.

In preparation for the second talk with the developer, it is useful to write out a sketch of the configuration checklist for your own reference. This allows you a reference point from which to pin things down in concrete form. Once you have the initial checklist and have gone over it with the developer the checklist can be expanded. At this point care must be taken to:

- (1) standardize the format, including repetition of the same dimensions within each variation in a single component and utilization of the same subject within a component;
- (2) use language appropriate for the user;
- (3) distinguish between critical and related components;
- (4) note any differences in variations due to student characteristics, i.e., variations for first graders may be different from variations from second graders.

The last part of Step 3 involves sketching questions and guidelines to use with a larger sample of users in Steps 4 and 5.

Figures 9 and 10 are examples of two checklist formats. Figure 9 is a simplified version of a checklist that was developed for analysis of Innovation Configurations patterns and for exploration of relationships between configurations and teachers' classroom interactions (Loucks, 1978). In its final form, this checklist could be completed by teachers without the presence of an interviewer or observer.

The checklist in Figure 10, was designed to evaluate how closely classroom use of the innovation matched the innovation as originally prescribed by the developer. It is a simplified version of a checklist developed for a tutoring program, "validated" to be effective when certain components were in place. In this checklist, the developer has appointed some component variations "ideal" according to their model, some "acceptable" and some "unacceptable." The dotted line separates ideal from acceptable and the heavy black line acceptable from unacceptable. This kind of checklist format is discussed further in the following section. The checklist as shown here was used to see how many components were actually in place as desired.

Math Program Checklist

Please check one choice for each of the six categories below that is the most descriptive of your math instruction.

1. Instructional materials:

- ☒ (1) Primarily textbook(s)
- ☐ (2) Primarily material packets provided by the program
- ☐ (3) Wide variety of materials, possibly including text(s), program packets, games, manipulatives, kits, centers, etc.

2. Grouping:

- ☒ (1) Teach whole class or two groups
- ☐ (2) Teach 3 or more small groups
- ☐ (3) Teach individuals only, no grouping

3. Objectives:

- ☒ (1) Program objectives are taught largely in sequence
- ☐ (2) Program objectives are taught largely out of sequence
- ☐ (3) Program objectives are not taught

4. Testing:

- ☒ (1) Tests are given for each objective
- ☐ (2) Tests are given for groups of objectives
- ☐ (3) No tests are given

5. Use of Test Results:

- ☒ (1) Test results determine next steps of individual students
- ☐ (2) If most of group passes test, the group goes on and those who failed are given special help
- ☐ (3) If most of group passes test, the group goes on and no special help is given those who fail

6. Record-Keeping:

- ☒ (1) Records are kept by objective for each child
- ☐ (2) Records are kept other than by objective for each child
- ☐ (3) No records are kept

Tutoring Program Checklist

1. Materials and Equipment (1) At least 5 different program materials are used with each child each session.	(2) At least 3 different program materials are used with each child each session.	(3) Less than 3 different program materials are used with each child each session.
2. Diagnosis (1) Children are diagnosed individually using a combination of tests and teacher judgment.	(2) Children are diagnosed individually using teacher judgment only.	(3) Children are not diagnosed individually.
3. Record-Keeping (1) Individual Record Sheet is used to record diagnosis and prescription.	(2) No Individual Record Sheets are used.	
4. Use of Teaching Technique (1) Continually readjusts task according to child needs; uses rewards to reinforce student success.	(2) Does not continually readjust task according to child needs; does not use rewards.	
5. Grouping (1) Children are taught in pairs.	(2) Children are not taught in pairs.	
6. Scheduling (1) Children are taught for 30 minutes 3 times per week. Each session is equally divided between children.	(2) Children taught for 30 min. 3 times per week, time for each child and each task varies slightly when necessary.	(3) Children not taught for 30 min. per week 3 times per week, or time for each child and each task varies markedly or is not considered.

CODE: — Variations to the right are unacceptable; variations to the left are acceptable.
 — Variations to the left are ideal, as prescribed by the developer.

Step 4: Testing the checklist with a few users and finalization of checklist

Step 4, piloting the checklist, is really the first half of Step 5, Data Collection. Often, at the very beginning of data collection, expansion and/or clean-up of the original checklist is necessary. Step 4 involves critical use of the checklist and its interview questions with the first few users of the large sample of users. Problems with the checklist usually become apparent within the first few times it is used. With a little work, the checklist can be refined for use with the remainder of the sample.

Three types of problems tend to occur at the beginning of Data Collection:

1. The major source of information about the innovation to this point has been the developer or facilitator. The language used in the checklist often expresses behaviors and activities in developer's terms. Translation to user language may be necessary for easy comprehension by users.
2. There is the possibility that more variations may exist than were anticipated in the original checklists. As the checklist is used in a context different from that in which preliminary information was collected, unexpected variations may be discovered. Some of these new variations, depending on interviewer judgement and developer consensus, may need to be incorporated in the final draft of the checklist.
3. The use of other or blanks to accommodate unexpected variations should be eliminated or kept to a minimum in the final version of the checklist. Otherwise the "other" variation may be most frequently found when data collection begins. After the trial run, the checklist variations should represent enough of a sample of use that open categories are not necessary.

Step 5: Major Data Collection

Major data collection typically involves administering the checklist to a large sample of users. The checklist may be user-completed or a part of an interview, given the data collection method chosen. If the checklist is to be used as a part of an interview, the user is generally asked first for a description of their use of the innovation, followed by questions and probes to distinguish use of components identified in the general description. A sample user

interview is contained in the Appendix. In-depth interviewing and observation of a subset of users can help interpret and explain the data obtained in the self-administered checklist. The data base for use in analysis of components and delineation of Configurations may be generated from interviews, observations, and/or self-administered checklists.

In the next section, we discuss in more detail the different formats a checklist may take.

SECTION V: CHECKLIST FORMATS

The checklist as it is used to collect information from users may vary in format depending on the data collection methodology, your resources, and of course, the innovation itself. In actuality, the same components containing the same information can be expressed in different formats. Most any checklist could be rewritten in a different format, depending on what best fits the needs of a particular study.

Simple Dimension Checklists

The major difference between checklist formats concerns the number of dimensions and variations contained within a component and the amount of descriptive detail within each variation. Some components have only one or two simple dimensions, while others are multi-faceted.

The component "objectives" shown in Figure 11 consists of three variations such that the coder marks only the one variation that best describes the users practice. Note that this component has: little detail, few dimensions, simple variations and mutually exclusive variations.

Figure 11

Component: Objectives

- ☐ (1) Program objectives are taught in sequence
- ☐ (2) Program objectives are taught out of sequence
- ☐ (3) Program objectives are not taught

Within this format, the user either is, or is not, teaching program objectives, and if "is teaching" them, is teaching them in sequence. In this case,

one variation can be marked to the exclusion of the others. Little detail is offered about the teaching of program objectives other than their sequencing, or not.

Multiple Dimension Checklists

In Figure 12 below, a more detailed description of the use of objectives is obtained by isolating each dimension of the component and considering it alone. The coder separately marks each dimension 'yes' or 'no'. The composite set of yes/no ratings then represents one variation of use of the component. Note that in this example the component has more detail, more dimensions, and the variations may not be mutually exclusive.

Figure 12

Component: Objectives

- _____ 1 Uses the PROGRAM objectives as the primary curriculum guide for ongoing math instruction.
- _____ 2 Devotes class time to teaching some or all PROGRAM objectives for ongoing math instruction--not remediation.
- _____ 3 Increases attention to teaching PROGRAM objectives immediately previous to PROGRAM testing (i.e., "preps" for PROGRAM tests).
- _____ 4 Teaches math objectives other than PROGRAM objectives (whether or not PROGRAM objectives are taught).
- _____ 5 Instructs resource room students in PROGRAM objectives.

The first example was concerned with if objectives were being used as desired (in sequence). The second example asks how and in what context the objectives are being used. In the latter case, as more dimensions are added the composite variations are more detailed and specific. However, as more variations become possible due to combining specific dimensions, there is also potential for some data analysis problems to occur. The formats illustrated in both examples are

straightforward and can even be completed by the user without the presence of an interviewer or observer, thereby reducing some data collection costs.

Combination Checklists

A third way of formatting a component about "Objectives" is illustrated below.

Figure 13

Component: Objectives of Academic Program Courses

1	2	3	4	5
Teachers of AC program courses teach skills in terms of a set of prescribed objectives keyed to proficiency tests. Skills are taught 20 minutes daily.	Teachers of AC Program courses teach skills in terms of objectives not keyed to proficiency tests. Skills are taught 20 minutes daily.	Teachers of AC Program courses teach skills in terms of objectives keyed to proficiency tests. Skills are taught less than 20 minutes daily.	Teacher of AC Program courses teach skills in terms of objectives not keyed to proficiency tests. Skills are taught less than 20 minutes daily.	Teachers of AC Program courses do not teach skills in terms of prescribed objectives.

The dimensions are combined into 5 different variations. Variations have become more complex, each one representing one possible set of interactions between dimensions. The number of variations present in this case however, have been restricted to those that were observed in the checklist development process. Note the number of dimensions and the possibilities for interplay between them:

1. Teaches skills in terms of a set of prescribed objectives. Does not teach skills in terms of prescribed objectives.
2. Teaches skills in terms of a set of prescribed objectives keyed to proficiency tests. Teaches skills in terms of a set of prescribed objectives not keyed to proficiency tests.
3. Teaches skills in terms of a set of prescribed objectives keyed to proficiency tests for 20 minutes daily. Teaches skills in terms of a set of prescribed objectives for less than 20 minutes daily.

The yes/no decision of Figures 11 and 12 is implicit in each set of dimensions. As an innovation becomes more complex, it is increasingly difficult to depict it in the dichotomous, 'yes' or 'no' variables of the first 2 examples. Dichotomous variables would make the checklist overly long and, more importantly, might miss a sense of the interrelationship of parts within the innovation. A format such as that of Figure 13 allows for a combination of dimensions within variations and considers the interaction between dimensions as integral to the innovation. It represents a view of how the component could be actualized in the overall context of use.

Deciding Which Variation

Completing checklists built on multiple variations generally require some interaction between the person collecting information and the user. The coder checks off the variation that "best" describes what the user is doing across a set of dimensions. The advantage of a checklist with variations containing multiple dimensions is that it allows for greater subtlety in the description of user adaptation and context. The disadvantage is that the checklist may present some matching problems between the variations presented and what the user is actually doing. The more detail and dimensions included within a variation, the more likely the possibility that any particular user will be implementing a component somewhat differently from the way it is characterized on the checklist. The possibility of variations existing that are not captured on the checklist also increases. The coder must make a judgement, based on knowledge of the innovation itself and his/her interview with and observation of the user.

All types of checklists have advantages and disadvantages depending on the intent of the data collection effort and the nature of the innovation. A very

complex innovation with multiple roles and activities might be better approached through a checklist portraying the interactions between dimensions, such as the one illustrated in Figure 13. A quick index of use is more easily approached through the checklist style of Figure 11. Figure 12 allows for a more in-depth description of the innovation without the interaction between dimensions. Other formats and their applications are illustrated in the Case Studies and Appendix sections of this manual.

Ideal, Acceptable, and Unacceptable Variations

As noted earlier, a checklist, as well as providing information to describe use, can be formatted to allow comparison of actual use to some ideal use specified by school systems, change facilitators, evaluators, or a developer. A checklist can reflect variation in use that is "ideal," "acceptable," and "unacceptable." In Figure 13 below, differentiation is marked by a heavy black line separating unacceptable variations from acceptable use, and a dotted line separating "ideal" use from "acceptable" use.

Figure 13

Component 1: Objectives of Academic Program Courses

1	2	3	4	5
Teachers of AC program courses teach skills in terms of a set of prescribed objectives keyed to proficiency tests. Skills are taught 20 minutes daily.	Teachers of AC Program courses teach skills in terms of objectives not keyed to proficiency tests. Skills are taught 20 minutes daily.	Teachers of AC Program courses teach skills in terms of objectives keyed to proficiency tests. Skills are taught less than 20 minutes daily.	Teacher of AC Program courses teach skills in terms of objectives not keyed to proficiency tests. Skills are taught less than 20 minutes daily.	Teachers of AC Program courses do not teach skills in terms of prescribed objectives.

In this version of Figure 13, all ideal variations were placed on the extreme left so that the range from ideal to unacceptable could be read horizon-

tally from left to right. The checklist could also be set off vertically with the variations descending from ideal to unacceptable down the page. Either layout works, and depends on the preference of the persons using the checklist.

Considerations for Final Draft

In drafting the final checklist, it is important to consider some "nuts and bolts" having to do with checklist clarity and format. Some of the points to follow have been mentioned earlier. We feel, however, that they are important to the development of a checklist that "works," and so reiterate:

1. The number of components used to describe the innovation will be influenced by the scope of the innovation and by the degree to which specific activities have been prescribed by the developer. Broad scope innovations and prescriptive innovations tend to have more components. Few innovations require more than 10 components to sufficiently capture the nature of the program. More than 10 components presents problems in data collection, especially if collection is done during an interview. One exception to this general rule of thumb occurs when the innovation involves more than one type of user and different behaviors have to be specified for each role. Another exception occurs for very complex innovations involving more than one subject area, or across different grade levels. "Innovation bundles," as this latter type of innovation is called, may necessitate a longer checklist, or even more than one checklist.

2. The number of dimensions included in component variations (descriptions) should be limited for the sake of comprehension and measurability. In its simplest form, a component could be a single variable that is either present or absent. More frequently however, more than one dimension is included to capture the complexity and interrelatedness of a component. We have found, however, that in most cases the more dimensions that are present, the more variations that are necessary to reflect the possible combinations. This makes for some difficulty in identifying with which variation the user is involved.

3. Component labels should be descriptive, capturing the essence of the behaviors or activities included under the component. They should also be brief. The component label should allow the data collector or user to understand what the component refers to, and therefore should not contain jargon, buzz words, or research terminology, except when absolutely necessary.

4. The language used in component/s variations should capture the essence of the developer's intent while remaining intelligible to the users. The language should reflect the user's context. In general, components should be worded in action terms--things that can be witnessed or observed either inside or outside the classroom.

5. The way that the checklist is to be used will influence the form that the checklist may take. A checklist that is to be self completed by users may need a different format for that purpose than one that is completed following observation and interview.

SECTION VI: USING YOUR CHECKLIST: DATA COLLECTION

Developing the checklist is a preliminary step to collecting data about use of the innovation. In the course of our research efforts we have collected data by (1) completion of the checklist by the user, (2) interviewing the user, and (3) observation of the innovation in use. All allow different perspectives on use and the innovation, and have advantages and disadvantages. Of the three, observation is generally used in combination with one of the others. With all of them the checklist may be used as a point of departure. To illustrate, we discuss each method in turn.

Completion of the Checklist by the User

Completion of the checklist by the user has the primary advantage of making few demands of users' time and availability. It is best utilized with innovations whose components or component dimensions can be answered in the dichotomous format discussed earlier in Section V--i.e., the user can respond with a yes/no or true/false answer to each item. However, even with more complex innovations and checklists, if the user understands the language and formatting of the checklist, s/he can complete it alone. Under all cases, it is inadvisable to use checklists with an "acceptable/unacceptable" demarcation when completed by users. To check user understanding of how to complete the checklist it is necessary to pilot it before data collection proceeds.

As with any pen and paper measure there may be some problems with self report and reliability of data. Generally, we have found user completed checklists to be useful descriptive measures that capture the overall gestalt of what an innovation is like in a school or larger context. If a great amount of de-

tail is needed, or if certain components are value laden, then user completed checklists probably should not be used.

Interviewing

For more intensive collection efforts, and for innovations that are more complex in nature, we have used the personal interview as the primary means of data collection. The interview allows for a breadth and depth of information not possible through a self-administered checklist. It allows the individual to define the innovation as they see it, or in terms of their relationship to it, without the restriction of component categories imposed on them initially. In the interview process the checklist becomes a tool not only to focus the interview questions, but to record the information as it is described by the user. Preparing for the interview requires that the interviewer develop some questions specific to the innovation prior to the interview itself. This allows the interviewer not only to direct the flow of the interview, but to make distinctions about how the innovation is used. In the user interview shown in the Appendix section of this manual, the interviewer has developed a series of questions aimed at obtaining information about how the user was using specific components. The questions are listed to the side in the commentary.

As in any research, gathering the needed information is highly dependent upon the interviewer's skill, style, and good judgement in questioning and probing. The interview should follow a conversational format with probing when possible or appropriate. It is important to put the user at ease and to take the time to build rapport and provide explanations. Questions should begin open-ended, then become more specific:

General Open-Ended: *"Would you please describe for me how you're using the CBHSD program?"*

Specific Open-Ended: *"How do you determine students' mastery of the material?"*

Specific Close-Ended: *"What are you using for those post-tests?"*
"If they do not score as a '3', what do you do with them?"

The intent of close-ended questions is to probe for details necessary to distinguish between component variations. Questions in this example are from the APL User interview shown in the Appendix.

An effective interview integrates focused and open-ended questioning and probes. We have found that ordering the questions in a sequence that would be natural to the use and implementation of an innovation in the classroom aids in probing and soliciting replies. Questions should go from general to specific, from early in the implementation process to later, from early in the class period to later in the class period, from early in the sequence of activities to the end. Open-ended questions are important to catch things that the user may have adapted to their own use that may not have been represented by the developer. They allow the user to define her/his own interpretation of the innovation. Because some individuals require more structure and do not respond well to open-ended questions, component probes intended to get at differing component variations can be an aid in their description of innovation use. These, however, should follow an open-ended beginning question.

The checklist as it relates to the interview is an important means of focusing data collection and analysis; it provides a systematic way of asking questions, tying together responses, and recording information. It is not, however, a substitute for the interviewer's awareness of and attention to the subtleties of different user variations. In many instances, users will be doing something which is not on the checklist, or which is a major adaptation of use. In other instances, they may have combined the innovation with other programs or re-named components such that there is confusion on the user's part on which program you want information. The interviewer, in turn, may have difficulty

interpreting the information presented by the user. The checklist in such situations cannot substitute for the flexibility of the interviewer who can phrase questions in a language which would accommodate some such matching problems. Some general guidelines for interviewing are listed in Figure 14.

Figure 14

GUIDELINES FOR INTERVIEWING

1. Before the interview

- (1) make contact with the school/district
- (2) arrange a convenient time to meet with the teacher
- (3) arrange a comfortable, nondistracting place for the interview

2. Beginning the interview

- (4) establish a casual informality by chatting before beginning
- (5) describe why you are interviewing
- (6) respond to any questions from the teacher
- (7) ask permission to use tape recorder after explaining purpose for recording

3. Conducting the interview

- (8) use open-ended questions whenever possible, but especially at beginning
- (9) use wait time after asking each question; do not jump in and immediately rephrase the question for a teacher
- (10) concentrate on what the teacher is doing
- (11) focus on the use of the innovation by the teacher, not the teacher and others (beware of the teacher using 'we')
- (12) focus on what s/he is doing now
- (13) find out about change in use and why changes were made
- (14) if the interview gets off the track, politely say, "I'd be interested in hearing about that later" and go on to a more focused question.

4. Completing the interview

- (15) summarize where you see the teacher in terms of how they are using the innovation and check whether it's accurate
- (16) thank them for their time and help.

If possible, interviews should be tape recorded so that the interviewer may strive for a natural flow of conversation. Tape recording allows interviewers to turn their attention to the interaction with the user, and to be freed from

the distraction of note-taking. Transcription and data analysis occurs later.

Tape recorded interviews also allow for an impartial completion of the checklist based on a second checklist coding as a reliability measure. They also provide a learning tool whereby beginning interviewers can receive feedback. Should difficulties arise in the interview, it is important to remember that the most valuable skill an interviewer possesses is his/her own intuition, empathy, and timing. If users seem reluctant or confused about the nature of the interview, time should be taken to address those issues before the interview proceeds. In general, it is better for the interviewer not to be dependent on a written list of questions during the interview. We recognize that depending on the length and complexity of the interview this may be an "ideal". However, the interviewer must judge the situation for how distracting referral to written questions would be to the user. We do recommend that the interviewers write down their questions at some point, to make them concrete for themselves before the interview.

Arranging The Interview

Arrangements with administrative officials as to what kind of schedule to follow should be worked out in advance, allowing teachers a chance to plan for the time they will be away from their classrooms. While most interviews can be done in twenty minutes (depending on the amount of information to be collected, e.g., configuration and Levels of Use),* it is best to allow some leeway

*As was mentioned in Section II and described in Figure 1, The CBAM Project at the Research and Development Center for Teacher Education focuses on a model of innovation adoption, the Concerns-Based Adoption Model (CBAM), that assumes change to be a highly personal and lengthy process. The model hypothesizes a number of dimensions along which individuals grow as they become more familiar with and sophisticated in using innovations. (Con't on next page)

between users to work out any complications which may occur. It has been our experience that even the best planned data collection procedure will encounter a user who wants more information, a substitute teacher who gets lost, or a teacher who can't leave their class just then. A little extra time usually helps alleviate problems. The following is a list of items basic to conducting interviews in the field:

- (1) copy of the schedule of interviews
- (2) a tape recorder and tapes
- (3) extra tapes, batteries, or recorder plug unit
- (4) copies of the Innovation Configuration Checklist, one for each user
- (5) copies of interview questions developed from the checklist
- (6) paper on which to record data or make notes about the conversation, as necessary

(Continued from previous page) Among these are Stages of Concern About the Innovation (SoC) and Levels of Use of the Innovation (LoU). Levels of Use of the Innovation (LoU) describes the behavior of individuals as they become more familiar with and more skilled in using an innovation. Each of the eight identified Levels of Use focuses on behavior that is characteristic of the innovation user at a particular stage of development. The procedure chosen to measure the individual's LoU is the focused interview. As part of the LoU questioning and branching format came to depend on actual use, or a minimum criteria for use of the innovation, Innovation Configurations and the use of the checklist as a means of determining what the user is actually doing, became a part of the LoU interview. LoU interviews, however, do not have to be combined with Innovation Configurations. For more information on Levels of Use see Hall, G. E., Loucks, S. F., Rutherford, W. L. & Newlove, B. W. Levels of Use of the Innovation: A Framework for Analyzing Innovation Adoption. Journal of Teacher Education, 1975 26(1) and Loucks, S. F., Newlove, B. W. & Hall, G. E. Measuring Levels of Use of the Innovation: A Manual for Trainers, Interviewers, and Raters. Austin: Research & Development Center for Teacher Education, The University of Texas, 1975.

Observation

The third means of collecting data, observation, can also be an important tool. Observation has particular value when an innovation involves multiple user roles, or has components that call for an interactive process, such as teacher-student exchanges. Observation can also verify the physical presence of items demanded by implementation requirements--books, classroom organization, learning centers, etc. In combination with interviewing or checklist completion, it allows for a broader perspective of the innovation and a sense of the context which can be helpful in interpreting user responses. Observation also serves as a means to validate the information collected by interview or pen and paper methods. In general we have used observation to collect more information as a complement to interviews. It can, however, be used more formally through the use of instrumentation, sampling, and analysis techniques designed especially for observation (Loucks, 1978).

None of the methods we have discussed--checklist completion by users, interviewing or observation--are perfectly reliable in a statistical sense. There are difficulties with recall, distortion and bias in interviews and self-completed checklists. There are, of course, differences in interpretation concerning the parts of the innovation and their importance. Nonetheless, it is our opinion that despite these qualifications, self-administered checklists and interviews, in particular when coupled with systematic observation, can provide information about implementation which is useful to practitioners working in schools.

VII. DATA ANALYSIS

There are many ways to analyze the information collected on a component checklist. The sample size, available resources, and the ultimate use of the information will influence the analysis procedures used in each case. The most basic type of analysis is the computation of individual component frequencies. A second type of analysis involves the development of Innovation Configurations. Both can be used to describe (1) what individual users do when implementing an innovation, (2) what groups of users do when implementing an innovation, or (3) what a total innovative program looks like. Component frequencies and Innovation Configurations are most commonly used for dissemination and staff development purposes. A third type of analysis examines the relationship of Innovation Configurations to outcomes--student, user or institutional. It is used for predictive or explanatory purposes and is most commonly found in evaluation research. We review each type of analysis in turn.

Component Frequencies

Generally, a checklist is completed for each user, marking the component variations s/he is using. The rating may be a simple 'doing' or 'not doing' or a number on a scale. The frequency of each variation within a component can be tallied across teachers. Raw tallies or percentages can then profile how a component is used by teachers within a team, grade level, school or district.

Figure 15 below is an example of individual teacher data for one school. The checklist belongs to the Jefferson County Elementary Science curriculum described in the Appendix. Each of the components was operationalized with scale points in the Principal's Handbook, which is described in the Appendix. The ratings were made after extensive observation and interviews with teachers. The

Figure 15:

Outside
Intended
ProgramGetting
A Good
StartWell
On The
WayBest
Practices
Working

50

Components:	0	1	2	3	4	5
1. Time is devoted to science		✓				
2. Science is taught according to R-1 Guide		✓				
3. Assessment of pupil learning		✓				
4. Integration of basic skills			✓			
5. "The Real Classroom Is Outdoors" is used as recommended		✓				
6. Recommended materials, equipment & media are available					✓	
7. Building arrangements have been made to facilitate implementation					✓	
8. Long and short range planning			✓			
9. Use of class time					✓	
10. Teacher-Pupil interaction facilitates program				✓		
11. Classroom environment facilitates implementation				✓		
12. Instruction is sequenced to facilitate the guided inquiry learning approach				✓		

School _____ Teacher _____

R-1 Program Evaluation

Revised Elementary Science Program Evaluation 1/79
Jefferson County, Colorado

information was used to describe present practice of the program in the school. It was used to compare actual practice with desired practice and then for diagnostic purposes in planning future inservice sessions. Figure 16 is a sample of checklist data aggregated for all the teachers at one school using the elementary science program.

Figure 17 is an example of individual teacher data from the same innovation aggregated across all schools. The figure shows the aggregated data for each of the components over which the teacher has the major influence for implementation in the classroom. In this case the district science office used the information for reporting to the Board and for planning of inservice; for example, an inservice on the use of the outdoors as part of the science curriculum.

Depending on why the information on the checklist is being collected, it may be appropriate to stop with the computation of component frequencies or to continue on to develop Innovation Configurations.

Innovation Configurations

Innovation Configuration can be developed by hand analysis of the checklist data or by the use of computer pattern analysis techniques. In either case, each variation for each component is first assigned a number. A teacher's use is then represented by a number sequence with as many digits as there are components on the checklist. The number in each digit represents the teacher's score on a particular variation. A list of multiple digit codes can be prepared and the codes can be clustered. Using hand analysis, the majority of the users of the math program noted previously in Figure 9 were found to have eight "dominant" configuration patterns. Two such patterns which emerged were:

Innovation Configuration A (311221): Wide variety of materials. Taught whole class or two groups. Objectives taught in sequence. Tests given for groups of objectives. If

THE REVISED ELEMENTARY SCIENCE PROGRAM COMPONENTS

	OUTSIDE PROGRAM	GETTING A GOOD START	WELL ON THE WAY	BEST PRACTICES WORKING
	0-----1-----2-----3-----4-----5			
1. Time is devoted to science		100% *****		
2. Science taught according to R-1 Guide	10% *	50% ****	10% *	30% ***
3. Assessment of pupil learning	10% *	10% *	40% **	30% ***
4. Integration of basic skills		60% ****	40% ****	
5. "The Real Classroom Is Outdoors" is used as recommended	10% *	30% ***	40% ****	20% **
6. Recommended materials, equipment & media are available			60% ****	40% ****
7. Building arrangements have been made to facilitate implementation			90% *****	10% *
8. Long and short-range planning		30% ***	10% *	50% *****
9. Use of class time		20% **	30% ***	40% ****
10. Teacher-Pupil interaction facilitates program		60% ****	20% **	10% *
11. Classroom environment facilitates implementation		20% **	20% **	60% ***
12. Instruction is sequenced to facilitate the guided inquiry learning approach		60% ****	20% **	20% **

* represents the functioning of one teacher according to interview and observation information on each component.

GREEN GABLES ELEMENTARY SCHOOL

Implementation of the Revised Elementary Science Program, February and March 1978

Program Components over which the Teacher has the Major Influence for
Implementation in the Classroom

	outside intended program	getting a good start	well on the way	best practices working	
"The Real Classroom is Outdoors" is used as recommended.	11%	25%	38%	11%	15%
Teacher-pupil interaction	11%	32%	35%	20%	2%
Classroom arrangement facilitates implementation.	14%	8%	23%	26%	29%
Instruction is sequenced to facilitate the inquiry learning approach.	9%	31%	40%	20%	
Use of class time	2%	18%	35%	31%	14%

Table shows percentage of classrooms for the Phase I sample schools in which
the Revised Elementary Science Program is being implemented according
to criteria for success.

most of group passes test, help given those who fail. Records kept by objective for each child.

Innovation Configuration B (231211): Primarily program materials. Individualized. Objectives taught in sequence. Tests given for groups of objectives. Test results determine next steps for individual students. Records kept by objectives for each child.

Referral to Figure 9 will help clarify this sampling. A somewhat more complex mode of analysis to identify Innovation Configurations was undertaken both by hand and with computer assistance to characterize implementation of the skills achievement monitoring system (SAM), also described in the Appendix. Three general classes of innovation users were developed clinically by the interviewers who had collected the information on the checklist. The component, "Use of Objectives" was the starting point for discrimination and initial placement of users. The three basic groupings, called "high," "medium," and "low" implementation, were entered into the computer and a non-hierarchical cluster analysis run. A vector of averages on each item was formed for each of the three groups. Percentage of users employing a particular practice was computed for each component within each of the three groupings. The results are displayed in Figure 18.

What an "average" teacher in each group is likely to be doing can be seen from the data. Configurations of this nature are gross measures of implementation and are useful in summarizing or describing what an overall implementation effort is likely to look like. These Configurations can then be used to begin to assess the relationship between outcomes and implementation.

Results of Hierarchical Cluster Analysis
on SAM Configuration Checklist

% True			
<u>Hi</u>	<u>Med</u>	<u>Low</u>	<u>Objectives</u>
<u>70</u>	<u>12</u>	<u>5</u>	1 Uses the SAM objectives as the primary curriculum guide for ongoing instruction.
<u>98</u>	<u>95</u>	<u>80</u>	2 Devotes class time to teaching some or all SAM objectives for ongoing math instruction -- not remediation.
<u>4</u>	<u>3</u>	<u>20</u>	3 Increases attention to teaching SAM objectives immediately previous to SAM testing (i.e., "preps" for SAM tests).
<u>78</u>	<u>95</u>	<u>95</u>	4 Teaches math objectives other than SAM objectives (whether or not SAM objectives are taught).
<u>33</u>	<u>32</u>	<u>20</u>	5 Instructs resource room students in SAM objectives.
			<u>Instructional Materials</u>
<u>65</u>	<u>20</u>	<u>10</u>	1 Uses pre-packaged materials (IMP or similar) keyed to SAM objectives for ongoing math instruction.
<u>78</u>	<u>17</u>	<u>15</u>	2 Uses personally grouped materials keyed to SAM objectives for ongoing math instruction.
			<u>Testing</u>
<u>93</u>	<u>20</u>	<u>15</u>	1 Administers tests specifically focused on SAM objectives between SAM tests.
<u>98</u>	<u>97</u>	<u>90</u>	2 Administers other math tests besides SAM tests.
<u>5</u>	<u>5</u>	<u>0</u>	3 Administers more than one level of the SAM to individual students (i.e., a student takes two SAM tests simultaneously).
<u>90</u>	<u>69</u>	<u>40</u>	4 Moves students from one level of the SAM to another during the year.
			<u>Printouts</u>
<u>100</u>	<u>92</u>	<u>95</u>	1 Sees that students each receive a copy of each SAM printout.
<u>100</u>	<u>83</u>	<u>30</u>	2 Provides that each student has a readily accessible record of performance (printout or chart) on previous SAM tests.

% True			
<u>Hi</u>	<u>Med</u>	<u>Low</u>	
<u>85</u>	<u>83</u>	<u>80</u>	3 Expects students to take <u>each</u> (every) printout to parents.
<u>90</u>	<u>95</u>	<u>90</u>	4 Sends printouts home with students at end of year (regardless of other times).
<u>3</u>	<u>3</u>	<u>0</u>	5 Requests parents to sign to show they have received printouts.
<u>10</u>	<u>26</u>	<u>5</u>	6 Shares SAM printouts with child's other teachers (e.g., Title I).
<u>8</u>	<u>6</u>	<u>0</u>	7 Posts SAM printouts in classroom (e.g., on the wall).
<u>Remediation</u>			
<u>98</u>	<u>98</u>	<u>25</u>	1 Requires students to show mastery or work toward mastery of objectives missed on SAM tests.
<u>28</u>	<u>49</u>	<u>15</u>	2 Creates problems or exercises "on the spot" to reteach missed objectives.
<u>83</u>	<u>37</u>	<u>10</u>	3 Uses pre-packaged materials keys to SAM objectives (IMP or similar) for remediation work.
<u>83</u>	<u>37</u>	<u>5</u>	4 Uses personally grouped materials keyed to SAM objectives for remediation.
<u>20</u>	<u>63</u>	<u>35</u>	5 Reviews SAM results with class as a whole within a few days of their return.
<u>93</u>	<u>37</u>	<u>15</u>	6 Reviews SAM results with individual students within a few days of their return.
<u>10</u>	<u>37</u>	<u>40</u>	7 Focuses remediation on whole class (based on SAM results).
<u>60</u>	<u>63</u>	<u>20</u>	8 Forms small groups based on SAM results for the purpose of remediation.
<u>98</u>	<u>66</u>	<u>5</u>	9 Focuses remediation on individual students (based on SAM results).
<u>100</u>	<u>100</u>	<u>60</u>	10 Compares previous results on SAM test with current results.
<u>95</u>	<u>100</u>	<u>30</u>	11 Assists students to be aware of progress made since last test (or over the year).

Relationship of Innovation Configurations to Outcomes

The third type of analysis uses configurations in the study of relationships between innovation implementation and outcomes. This type of analysis is used to assess what effect, if any, an innovation has on student learning, or any other desired outcome. In the study of the skills achievement monitoring system (SAM) described in the Appendix and mentioned above an analysis of covariance was performed using the final achievement test of the school year as the dependent variable (George & Hord, 1980). The three implementation groups served as the independent variable; the initial achievement test, grade level and sex served as the covariates. It was shown that the "medium" implementation group correlated highest with achievement scores. The results of this analysis were used in application for validation of the innovation at the State and Federal level. They were further used by developers of the innovation and decision makers to see which practices had gained widespread use and which seemed the most related to outcomes. This information was communicated to new schools who were considering adoption of the innovation.

It is important to point out that analysis relating Innovation Configurations to outcomes is still in the exploratory stages. More work is needed concerning the stability of the configuration groups. There is also a need for studies that partial out effects of the Innovation Configurations from those of the entire learning context. More complete models are needed to capture the interaction of the innovation with all the variables operative in the learning context at both the individual and institutional level.

Some Unresolved Problems in the Analysis of Component & Innovation Configurations

In closing the section on data analysis we mention several unsolved problems relating to the analysis and interpretation of information on component use and Innovation Configurations.

(1) Aggregation of data from individual to site. At times we would like to know about overall implementation at a site. We would like to summarize across users. But quite apart from the problem of small samples, we are faced with variations that lack the properties of interval scales. We cannot aggregate across users in a statistical sense. At best, we can use the experience and judgement of interviewers and observers to describe trends in component use and overall configurations.

(2) Reliability of checklist data. To date, no formal study of the reliability between checklist data obtained through interviewing and checklist data obtained through observation has been conducted. The users of checklists should be aware of the possibility of discrepancies between the data collected under the differing methods, particularly for components concerning teacher role and teacher-student interactions and affective dimensions.

(3) Relationship of information on checklist to past practice: The question of change. The information derived from interviewing and observation characterizes what users are doing at present while implementing an innovation. The information does not indicate what the user was doing prior to the adoption and implementation of the innovation. Neither does it convey whether or not current practice is different from past practice, although in the course of an interview a teacher will most probably share some information about what s/he was doing before implementing the innovation. We recommend caution in using the information on implementation to discuss "change" on the part of innovation users. We suggest instead that practitioners use component and Configuration data to describe current use of all innovations in the classroom.

(4) Relationship of information on checklist to the rest of the learning context. In considering the relationship of components and configurations to outcomes, it is necessary to recognize the importance of factors other than the

behavioral parts of an innovation as influences on outcomes. Among these are the philosophy of the innovation, the training of teachers to use the innovation, administrative support of the innovation, teachers' Level of Use and Stages of Concern, and a variety of instructional dimensions which may or may not overlap with the innovation. As was mentioned earlier, caution in attributing outcomes to the innovation is needed, along with more work in exploring the whole learning context of the classroom.

SECTION VIII: APPENDIX

Case Studies

1. Early Prevention of School Failure, Peotone, Illinois
2. Bilingual/Bicultural Demonstration Project, San Antonio, Texas
3. Jefferson County Elementary Science Curriculum, Denver, Colorado
4. Teaching of Writing, Hacienda La Puente, California
5. Skills Achievement Monitoring System (SAM), Fitchburg, Massachusetts

In this section of the manual we provide illustrations of points we have made throughout the text. As was mentioned in the introduction, information about Innovation Configurations is one cornerstone for understanding and facilitating the change process. We have found it useful for many different activities, including dissemination, evaluation, staff development, and research. The following case studies are examples of Innovation Configurations as used in one or a combination of those ways:

Early Prevention of School Failure is an early childhood education program which is used for pre-K through second grade. The checklist was developed for EPSF as a part of a federal research project examining local school improvements and the state and federal programs that support them (Crandall, et al., 1981). In turn, the checklist was used by EPSF staff as a means to disseminate their program nationally.

The Title VII Bilingual/Bicultural Demonstration Project checklist was used primarily for evaluation purposes within the district and for contract compliance with the Federal Government. The Teaching of Writing Checklist for Hacienda La Puente, California, was developed for the purpose of measuring change within initial implementation of an innovation as a part of a research

project conducted by the CBAM Project, Research and Development Center in Teacher Education, The University of Texas at Austin.

Checklist information collected on the Jefferson County Elementary Science Curriculum, Jefferson County, Colorado, was used both for evaluation and staff development purposes. Innovation Configuration work with the Skills Achievement Monitoring System (SAM), Fitchburg, Massachusetts, assessed extent of implementation over a two year period, relationship of implementation to student outcomes, and was used as a means for the program to present its application for federal validation.

Each case study has its own uniqueness in terms of checklist development, format, how the data were collected, and the goals of the data collection. In providing these as illustrations of how the concept of Innovation Configurations has been utilized, we hope to answer some of the contextual questions that may not have been addressed throughout the text. We hope that these examples will provide some insights as to applications of the concept in the field, and in particular, in reference to your own interests in applying Innovation Configurations and Innovation Configuration Checklists.

1. THE USE OF A COMPONENT CHECKLIST FOR RESEARCH AND DISSEMINATION: EARLY PREVENTION OF SCHOOL FAILURE

The Early Prevention of School Failure Checklist was developed as a part of a Federal research project examining local school improvements and the state and federal programs that support them. The checklist was later modified by Early Prevention developers to disseminate the innovation nationally.

The Innovation

Early Prevention of School Failure (EPSF) is a pre-kindergarten through first grade program designed to prevent school failure through the early identification and appropriate remediation of the learning deficiencies of children entering school. Development and dissemination of the innovation was funded by the Illinois Office of Education, Title IV, ESEA. EPSF is a nationally validated developer-demonstrated model project.

The EPSF model identifies five modality areas (speech, language, audition, motor coordination, and emotional-social development) as indicators of readiness for kindergarten. The program begins with a screening of all children in each of these areas by a team of people selected on the basis of some expertise in modality areas. A profile is then drawn up for each child and discussed by the team. The team plans a set of activities to meet the needs of each individual child. The teacher applies this plan, preferably individually, to tasks relevant to the developmental level indicated on the screening. Aides are used to facilitate individual or small group instruction such that each student with needs receives 20 to 30 minutes of instruction daily. Records must be kept of each child's successful accomplishment of the tasks outlined in the EPSF management guide. All materials used during the EPSF period are to be keyed to a

specific objective listed in the management guide so that children are working on objectives in sequence. Students appointed for EPSF remediation are post-tested at the end of the year to assess progress. Full implementation of the program would likely find a good deal of parental involvement with parents helping in class or reinforcing learning at home.

Development of the Checklist

The checklist was originally developed as a part of a nation-wide study of the implementation of certain projects funded by the U.S. Office of Education. The study called "A Study of Dissemination Efforts Supporting School Improvement," was intended to examine local school improvement efforts and the federal and state programs that support them (Crandall, et al., 1981). The larger study looked at 165 randomly-chosen school districts in ten states across the country to determine how new programs are carried out and to learn what conditions help or hinder their use. Among other things, the study wanted to know how closely programs used in schools came to replicating the developer's model.

The checklist (Figure 19) was therefore designed to correspond to the format used across all innovations studied. The format of the checklist represented the study's interest in fidelity, with variations to the far left indicating ideal replication, variations in the middle indicating acceptable replication, and variations at the far right indicating unacceptable implementation. Users were interviewed by a staff of field researchers who marked those variations on the checklist which most closely corresponded to the ones described by the teacher. Some notes were made of context differences to compare across innovations in the Dissemination Study. It was felt that context differences may account for some differences in implementation.

In developing the checklist, CBAM staff members visited the Developer of the project, Lucille Werner of Peotone, Illinois. After interviewing her and some of her staff, CBAM staff visited various sites where the innovation was in use. Using both an initial interview and observation, a preliminary checklist was drawn up and discussed with the developer. Some minor adjustments were made, ending up with the checklist shown in Figure 19. Information pertinent to setting up the innovation in the classroom went into "implementation requirements;" information pertinent to the activities and behaviors of the teachers and others when using the innovation in the classroom went into the component checklist. The procedures followed by CBAM staff in developing the checklist were the same as those discussed in Section IV and illustrated in Figure 8.

Data Gathered Utilizing the Checklist

Early Prevention was observed in 6 sites over the winter of 1979-80. Across these sites there were 15 users ranging from pre-kindergarten to first grade. The checklist was used as the recording device to measure present practice of the innovation, past practice or what had been done by teachers before the innovation was introduced, and ideal use of the innovation as the user conceptualized it.* Information about use as focused by the checklist was contained within a structured interview format. Data analysis for the study is currently in progress.

Discussion and Later Use of the Checklist

Communication with the Early Prevention Staff was maintained throughout the initial phase of the data collection to adjust for matching problems between the

*Acceptable use of component variations differed for first grade as noted at the bottom of each component on the checklist, Figure 19.

original checklist and actual site variation. In Particular, consultation between Early Prevention Developers and CBAM staff occurred over what was an acceptable variation in actual practice. As the sample of users visited before actual field work began was not as large as might be desired, the checklist did not include the range of possibilities we found in the field. This meant some ongoing revision of the checklist and/or questioning, though no major changes in checklist content or structure occurred.

One result of the interview with the developer and continuing contact with Early Prevention Staff was that the process came to be seen as having value not only in describing attributes of the innovation, but in clarifying how those attributes are actualized:

"Your initial work was a great help to me when I was working on this implementation checklist. Sometimes it is hard to be specific about the indications that prove that the main component is in place . . . designing a checklist can be a profitable experience for the developer as well as the person/thing checked. It clarifies goals and observable behavior for everyone."

Judy Judy, EPSF Consultant
October 2, 1980

While our initial development of the checklist was for research purposes, EPSF staff found it a useful tool for dissemination of the innovation to potential users and to funding agencies. Based on the main structure of the checklist used in the Dissemination Study, Early Prevention Staff revised it slightly to match the program as they wanted it to be represented (the most major change was dropping a component on use of aides in the classroom and some rewording). The revised checklist was then placed in the National Diffusion Network Grant Application. NDN grants require that there be some evaluative process such that the developer can determine if true implementation occurs. The ideal, acceptable, and unacceptable format allows a general indication of this when adjusted for the school context.

Figure 19

FIELD RESEARCHER
COMMENTS

STATE _____ CITY _____ DISTRICT _____ BUILDING _____ ID# _____ CONFIG _____

COMPONENT CHECKLIST FOR EARLY PREVENTION OF SCHOOL FAILURE

NOTE: SOME TEAM MEMBERS MAY NOT BE INVOLVED IN COMPONENTS 3,4,5,6

Component 1: Team Screening

(1)	(2)	(3)	(4)	(5)
All incoming students screened in 5 modality areas (speech, language, audition, motor coordination, emotional, social development) using program testing materials; Screening done by team members as a team effort	All incoming students screened by other than team members; results given to teacher	Students screened by teacher according to suspected problem areas	Students screened using tests other than program testing materials	No Screening

1st Grade: Kindergarten post testing may be taken as initial screening for 1st Grade use - Need not be team screening -

Component 2: Team Planning of Individualized Programs (Staffing)

(1)	(2)	(3)	(4)
All team members conference to plan individualized program for students on basis of screening results	Only part of team conference with kindergarten teachers to plan individualized program for students on basis of screening results	Planning done by teacher alone, with advice of special ed. staff or resource personnel	Teacher alone plans, no consultation

Component 3: Time Spent on Individualized Instruction

(1)	(2)	(3)	(4)	(5)
Each student having below average performance in any modality receives 20-30 mins. daily, (4 days min.) of instruction individualized to special modality areas	Each student having below average performance in any modality receives 20 mins. of individualized instruction in the low modality given 2-3 times per week on a regular basis	Students having below average performance in any modality receives less than 20 mins. per day of individualized instruction in the low modality areas	Individualized instruction given occasionally when need is obvious	No individualized instruction

1st Grade: There may be fewer children in group using EP. Instruction may be individualized or group as needed by child. Therefore, variations 1-4 are acceptable.

1979, CBAM: Checklist developed by S. Stiegelbauer and A. George of CBAM with Luceille Werner and Judy Judy, of EPSF, from developer interviews and observations of users, for "A Dissemination Study in Support of School Improvements", Crandall, et al, 1981

Figure 19 (Cont.)

COMPONENT CHECKLIST FOR EARLY PREVENTION OF SCHOOL FAILURE

Component 4: Proximity of Aides & Resource People

(1)	(2)	(3)	(4)
Aides & special resource people assist in instruction in modality areas in the students' regular classroom	Aides assist in classroom, resource people outside of classroom give instruction in modality areas	No aides; resource people outside classroom given instruction in modality areas	Neither aides nor resource people give instruction in modality areas

1st Grade: Same as in Component 3

Component 5: Sequencing of Student Tasks

(1)	(2)	(3)
Manipulative is matched to skill development, based on screening results- sequence of skills is according to guide & moves from concrete first to paperwork	Manipulatives are used for skill development but not in sequence of the guide, yet use is according to child's ability	Manipulative use is not directed toward development of specific skills

1st Grade: Same as in Component 3

Component 6: Record Keeping

(1)	(2)	(3)	(4)
Each individual student's progress recorded by individual supervising instruction- records kept in EPSF classroom management guide, cued to skills in EPSF guide	Individual records of student behavior kept, records cued to skills in classroom management guide	Individual records of student behavior kept, but not cued to skills in classroom management guide	No record keeping

1st Grade: Same as in Component 3

Component 7: Post Testing

(1)	(2)
Only specific students given services are tested in 3 modality areas at end of year compared to initial screening	No follow-up testing

1st Grade: Variation 2 is acceptable for 1st Grade

Component 8: Parental Involvement (RELATED)

(1)	(2)	(3)	(4)
Parents actively involved in classroom as well as with work with child at home on individual skills	Parents aware of program, work only at home with child	Parents aware, but not involved	Parents not involved

1st Grade: Same as in Component 7

— Anything to right is "unacceptable", to left is "acceptable"
 — Anything to left is "ideal"

2. THE USE OF INNOVATION CONFIGURATIONS AND CHECKLIST FOR EVALUATION: TITLE VII BILINGUAL/BICULTURAL DEMONSTRATION PROJECT

The Bilingual/Bicultural Demonstration Project used an open-ended checklist as a tool for gathering information about program implementation. Innovation Configurations based on checklist data were used to summarize teacher behaviors during implementation and the success of the program in terms of implementation and student gains.

The Innovation

In 1975, a 5-year Title VII Bilingual/Bicultural Demonstration Project was initiated by a San Antonio, Texas school district. The project had two major objectives. The first objective was to install a comprehensive bilingual program in those six District elementary schools most in need of bilingual education. This program was comprised of five operational components: Administration, Staff Development, Instructional Curriculum, Parent Involvement, and Evaluation. The second objective was to implement three instructional models-- Behaviorist, Eclectic, and Child-Centered--with each model assigned to two of the participating schools.

The Behaviorist Model follows most closely "traditional" ideas of teaching. Activities are teacher-directed; a prescribed curriculum is followed; learning centers are not used; supplemental activities are used for reinforcement rather than enrichment. The Eclectic Model permits the teacher to choose the role s/he assumes in front of the class, to select materials, teaching approach, and grouping strategies based on some combination of his/her professional judgement and the needs of the class. The Child-Centered Model shifts toward child-initiated learning. Groupings are heterogeneous; learning centers are used for

discovery and reinforcement; language learning occurs in a cultural context rather than through repetition; content areas are mixed rather than taught in isolation.

In all, the project aimed not only to contribute a comprehensive bilingual program to the District, but also to generate important information regarding the effects of three different teaching methodologies which could be applied to the field of bilingual education at large.

The Bilingual/Bicultural Demonstration Project was an innovation bundle comprised of several smaller innovations. Information was collected on each of the "sub"-innovations for both the district and the federal government. The greatest attention was turned toward the instructional models and the role each might play in student performance. As each participating school enrolled a similar population and would be utilizing the same comprehensive bilingual program, longitudinal data could be collected to determine which instructional model, if any, contributed most to the educational gains of pupils. An accompanying planned variation research design was created to track four cohorts (age groups) of children throughout the 5-year period. Data was collected on (1) curriculum and model implementation, (2) pupil progress in English (language arts and reading), Spanish, math and self-concept, and (3) expenditures. Additionally a seventh school was added during the second year for comparative purposes.

The Development of the Checklist

Instructional model implementation was not measured during the first year. For the second and third years, a Teacher Questionnaire was developed and administered which indicated implementation based on staff and teacher perceptions. Conflicting results were obtained, indicating good implementation of the

Eclectic and Child Centered models during the second year and good implementation of the Eclectic and Behaviorist models during the third. Administration of a more objective measure, the Level of Use Interview, coupled with a component checklist, was undertaken in the fourth and fifth years. These results are shown in Figure 21.

The checklist itself was developed by the resource staff and the project evaluator. Evaluation and technical assistance was subcontracted by Dr. J. Butler and associates from 1977 to the end of the project. CBAM staff assisted with interviews and problem-solving. The research staff had conducted the staff development training in which teachers learned how to implement a particular instructional model. In addition, the resource staff also taught in the program and were frequently in classrooms observing teachers. They were familiar with what teachers in each model might be doing, and consequently, the checklist was constructed without additional visits to classrooms.

The checklist reflected teacher behaviors in the following areas for each instructional model: (1) teacher role, (2) classroom grouping, (3) use of learning centers, (4) use of curriculum materials, (5) second language instructional approach. Interviewers would ask teachers the probes contained at the right hand side of the checklist (See Figure 20, Checklist and Probes), marking responses as they best matched categories on the left side. Variations within each component were identified as belonging to either the Behaviorist (B), Eclectic (E), or Child-Centered (CC) model. Decision rules concerning which combinations of component variation fell into which Configurations were established. The original 3 models, or Configurations, were expanded to include 2 "mixed" models on a continuum of 5 models: Behaviorist, Behaviorist/Eclectic, Eclectic, Eclectic/Child Centered, Child Centered. Teachers were classified along the continuum based on the number of component variations marked by coders

which were classified as falling within a certain approach. Variations as they indicated differing approaches on the checklist were as follows:

Teacher Role

- (B) directs every subject
- (CC) facilitates learning
- (E) varies according to need

Grouping

- (B) whole class, small stable ability groups, individual seat work
- (CC) any combination with the exception of small stable ability groups
- (E) any combination with emphasis on needs of children/classroom

Use of Centers

- (B) 0-2 centers used only for reinforcement
- (CC) more than 5 centers used, both types, emphasis more exploratory
- (E) 2-5 centers used, both types

Materials

- (B) Basils, some reinforcement, structured
- (CC) over 50% supplementary
- (E) based on needs of class

Second Language Learning

- (B) Audiolingual
- (CC) Sociolingual
- (E) both

The final version of the checklist is shown in Figure 20. Please refer to it for a broader description of component variations and probes. Interviewers were asked to record their overall impressions of a teacher's position on the continuum as well as to classify a teacher on the basis of each component rating.

Use of the Checklist

110 teachers were interviewed over a two year period, 55 each year. Checklist information was collected first, followed by LoU data. All teachers interviewed were observed and rated on the same checklist by district resource staff

in the same week as the implementation interview. Reliabilities on the overall rating on the type of the instructional model being implemented by the teachers were over 90%. Reliabilities were not computed on individual components.

Use of the Data

Data was collected and used primarily for evaluation purposes both within the district and for contract compliance purposes with the federal government. Information about the actual instructional model used (Behaviorist, Behaviorist/Eclectic, Eclectic, Eclectic/Child-Centered, or Child-Centered) by each teacher, for each grade in each of the 6 schools in the sample is displayed in Figure 21. The schools are identified B1, B2, E1, E2, CC1, and CC2 according to the instructional model (behaviorist, eclectic, child-centered) for which the teachers in that school were trained. Note the creation of two "intermediary" categories around the Eclectic model called Behaviorist/Eclectic (B/E) and Eclectic/Child-Centered (E/CC) in the categorization of actual implementation. The data is summarized across teachers for each school in Figure 22.

The results indicated good implementation of the Behaviorist model, variable implementation of the Eclectic model, and a lack of implementation of the Child-Centered model in a pure sense. Relative implementation in the order expected was found, with the Behaviorist schools consistently most Behaviorist, the Eclectic schools most Eclectic, and the Child-Centered schools, while still Eclectic on the average, nearer to the Child-Centered end of the continuum. The Comparison school had no designated instructional model. It is important to note that the finding of non-implementation of the Child-Centered model in a pure form, with the exception of 1 teacher, resulted in the need to suspend judgement on the efficacy of the model. Clearly, if the model didn't exist, it

could not be expected to produce results, and conversely, could not be faulted for not producing results.

The results of the study were synthesized as follows, points 2 and 3 referring specifically to implementation of the three instructional models measured with the component checklist and the 5 Innovation Configurations:

1. The NISD Title VII Bilingual Project was generally quite successful in accomplishing its primary goal which called for the development and implementation of a comprehensive bilingual/bicultural education project in the six District elementary schools most in need.
2. Due to a variety of difficulties, the project was less successful in completely accomplishing its auxiliary goal regarding the additional implementation of the three instructional models. The Behaviorist and Eclectic models appeared to receive satisfactory implementation, the Child-Centered model did not.
3. While covariance analyses among the Behaviorist, Eclectic, Child-Centered, and Comparison groups produced relatively few results that could be considered educationally significant, the Behaviorist and Eclectic groups were favored most often, followed by the Child-Centered and then the Comparison groups. Further, the gains of the project groups fairly consistently outweighed those of the Comparison group.
4. When expenditures were considered in relation to enrollment figures, a greater proportion of project funds went to the Behaviorist schools (44%), than to the Child-Centered schools (31%) and, finally, to the Eclectic schools (25%).

The following recommendations were suggested using the data on the 3 Innovation Configurations:

1. Since the successful implementation of the NISD Bilingual Project--regardless of model implementation--resulted in greater educational gains for the participating schools than were evidenced in the Comparison school, it is recommended that the District continue to provide such a comprehensive program to the schools most in need.
2. Since the bilingual curriculum did not appear to be as adequately implemented in the Child-Centered schools and that model did not attain implementation in its absolute sense, it seems unfair to consider the present planned variation covariance analyses a fair estimate of the potential benefits of the Child-Centered model. Thus, it is recommended that either the District or the Office of Education consider funding a future project which has the resources required to fully implement this more complicated model and more fairly assess its effects.

3. The remaining two models which received the greatest implementation and achieved the greatest educational gain are the Behaviorist and Eclectic models. Here it is noted that while a greater proportion of funds were expended in the Behaviorist schools in relation to their enrollment, Behaviorist pupil gains were no better than those found in the Eclectic schools. It is therefore recommended that the District support the utilization of the Eclectic model until further information is attained. At much less expenses, variable implementation of the Eclectic method produced comparable achievement gains to the Behaviorist model and greater gains than were found at the Child-Centered and Comparison schools. The choice of this method, which calls for teacher selection of the instructional method believed to be best for each particular classroom situation, certainly casts a vote of confidence in favor of the individual professional judgement of participating teachers.

As can be seen from the above illustration, the component checklist with its corresponding interview guide was a useful tool for generating information about program implementation. The deviation of 3 Innovation Configurations from the original teacher training design and the addition of two other configurations based on information collected in the field proved useful for summarizing program implementation. The use of these Configurations to relate implementation to outcomes, in this case student gains, was a successful application of the CBAM approach to implementation measurement in an evaluation context.

General descriptions of the study, study results, figures and recommendations were taken from "Northside ISD Title VII Bilingual/Bicultural Demonstration Project: Final Report of a Planned Variation Study of Three Alternative Approaches to Bilingual/Bicultural Education of Young Children, 1975-1980," Dr. Jacqueline Butler, Austin, Texas. Office of Education Grant No. G00-75-07163, October, 1980.

LoU Interview - IntroductionRe: The Tape Recorder

For our information only, can be turned off at any time if you wish
Will not be heard by project staff or your principal
Information will never be used in a way that anyone could identify you personally.

BACKGROUND

The Bilingual Project of this school is a very important and unique one.
It's also a very complicated project. What we're wanting to find out is
more about how the teachers are going about implementing the instructional
models in their classrooms.

First, let me just get some basic background information:

How many years have you taught? _____

How many years have you taught in the bilingual project? _____

Do you speak Spanish? _____

What is the basic composition of your class this year (Language/Ability)?

From what I understand, here at _____ things are set up like this:

Is that right?

As I said, we want to know more about how teachers are implementing their
school's model in their classrooms. We're not so much interested in the
extent to which you use the bilingual curriculum materials because that's
individualized to each child, and besides, your mastery grids will tell
us that.

What we're wanting to know is how much you've been able to implement the
instructional model that's assigned to your school.

Tell me, do you feel as if you are using the model? _____

If YES: Just how are you using the model?

Go on to configuration questions and LoU

If NO: Why not? So what are you doing in terms of instructional approach?

Go on to get configuration/LoU for their approach.

TEACHER ROLE -----

- ____ Directs every subject (content/method)
- ____ Facilitates learning -- more than half of student's day is spent in self-directed activity
- ____ Varies according to child needs

*Could you describe for me what role you take in your classroom?

*If facilitator, what does being a facilitator mean to you? How much choice do the children have? On the average, how much of your children's day is spent in self-directed activity?

*Do you take this role most of the time? If not, under what circumstances do you change? How often does this happen?

GROUPING -----

- ____ Whole class
- ____ Small stable ability groups
- ____ Small flexible heterogenous groups
- ____ Small flexible skill groups
- ____ Individual

*How do you group your children? On what basis?

*Do your groups change? How often? On what basis? How often have they changed this year?

*How much time is spent in whole class instruction?

*How much time is spent working individually?

USE OF CENTERS -----

- ____ Number of centers
- ____ Reinforcement
- ____ Discovery/interest/initial learning
- ____ Both

*Could you tell me if you use learning centers? How many do you have? What is their purpose? How are they used?

*How often are they used? Changed?

*How much choice do your children have about using the centers?

MATERIALS -----

- ____ Packaged, sequenced, structured; any others are reinforcement/supplement
- ____ Combination (packaged, teacher or child developed); varied by subject matter, child interests, needs

*Do you use the textbooks across subject areas? If no, why not? How do you use the textbooks?

SECOND LANGUAGE LEARNING -----

- ____ Audiolingual: instructor directed, structured, sequenced, drill, repetition, modeling
- ____ Sociolingual: situational, learning through usage, integrating, meaning learning in context, based on pupil interest
- ____ Both

*How is second language instruction handled for your students? For English dominant? Bilingual? Spanish dominant?

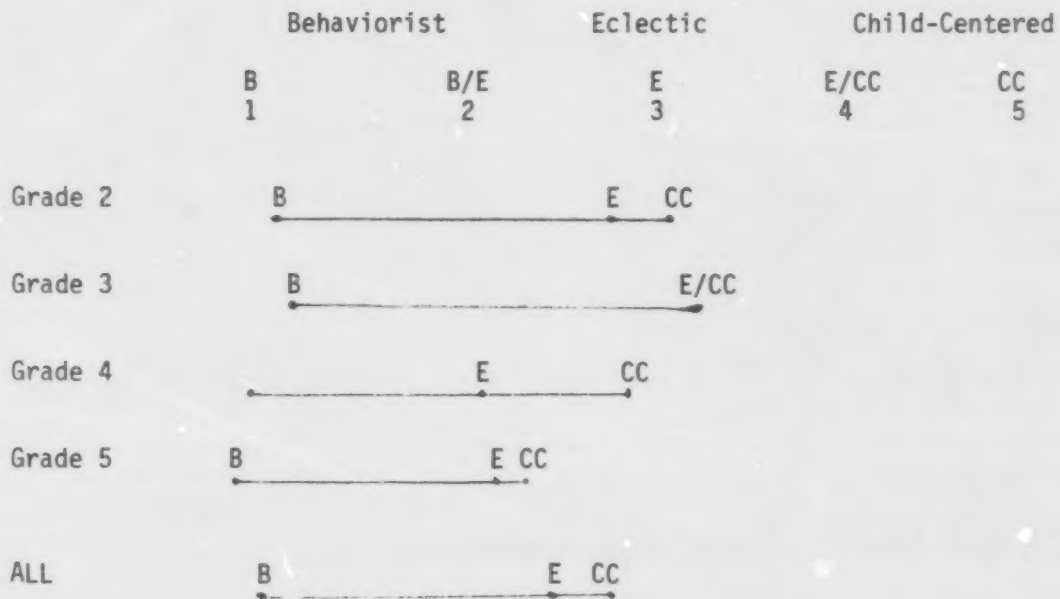
*How does this compare to how their instruction is handled the rest of the time?

Figure 21:

Bilingual LoU
Implementation
Data

GRADE	MODEL										74		
	B (1)		B/E (2)		E (3)		E/CC (4)		CC (5)		AVERAGE		
	FY 4	FY 5	FY 4	FY 5	FY 4	FY 5	FY 4	FY 5	FY 4	FY 5	FY 4	FY 5	BOTH
SCHOOL B1:													
2	1	2	2	1							1.67	1.33	1.5
3			2	3							2.0	2.0	2.0
4	2	2									1.0	1.0	1.0
5	2	2									1.0	1.0	1.0
TOTAL	5	6	4	4	0	0	0	0	0	0	1.44	1.4	1.42
SCHOOL B2:													
2	3	4	1								1.25	1.0	1.13
3	4	4									1.0	1.0	1.0
4	4	1		2							1.0	1.67	1.29
5	3	3		1							1.0	1.25	1.14
TOTAL	14	12	1	3	0	0	0	0	0	0	1.07	1.2	1.33
SCHOOL E1:													
2			1	2	3	4	3				3.29	2.67	3.0
3					2	1	4	5			3.67	3.83	3.75
4	1		2	5	3	1					2.33	2.17	2.25
5	1			3	4	4	1				2.83	2.57	2.69
TOTAL	2	0	3	10	12	10	8	5	0	0	3.04	2.6	2.92
SCHOOL E2:													
2			2	3	1	1	1				2.75	2.25	2.5
3			3	2	1	1					2.25	2.33	2.29
4			2	3	1						2.33	2.0	2.17
5	2	2	1	1							1.33	1.33	1.33
TOTAL	2	2	8	9	3	2	1	0	0	0	2.21	2.07	2.11
SCHOOL CC1:													
2			2	3	3	3	3	1			3.13	2.71	2.93
3				2	3	2	2	4			3.4	3.27	3.31
4				1	3	3	3	2			3.5	3.17	3.33
5	2	1		2	2	2	4	2			2.5	2.43	2.47
TOTAL	2	1	4	8	11	12	10	7	0	0	3.07	2.89	2.98
SCHOOL CC2:													
2				2	2	1	1	1	1		3.75	2.75	3.25
3					3	3					3.0	3.0	3.0
4					3	3					3.0	3.0	3.0
5				2	3			1			2.67	2.0	2.33
TOTAL	0	0	2	5	8	7	2	1	1	0	3.15	2.69	2.92
GRAND TOTAL	25	21	22	39	34	32	21	13	1	0	2.52	2.35	2.44

LoU Model Implementation Averages Final Summary



3. THE USE OF A COMPONENT CHECKLIST FOR EVALUATION AND STAFF DEVELOPMENT: JEFFERSON COUNTY ELEMENTARY SCIENCE CURRICULUM

The Science Department of Jefferson County Public Schools, Colorado, in collaboration with the District Evaluation Division, and with some influence and assistance from CBAM staff members, developed a checklist to assess the implementation of the Science curriculum. The checklist was used for the dual purposes of both continuing staff development and evaluation for the success of the implementation process.

The Innovation

The Jefferson County Elementary Science curriculum (Jeffco Science, for short) is a hands-on, inquiry-based, activity-oriented science program for grades 3 through 6. It is a combination of units and activities from the SCIS, ESS and county-developed programs. Five to six units per grade level involve content from life science, physical science, health, and earth science/astronomy. Every 3-6 grade teacher in the school district is expected to use this science curriculum in their classrooms.

Development of the Checklist

The Science Department in Jefferson County recognized the need to assess the implementation of the curriculum, for the purposes of both continuing staff development and monitoring of the success of the implementation process. The checklist was to be a tool for building principals, who would be able to assess how each teacher was implementing the program, and make suggestions or call on the Science Department for help where needed. It was also to be used by the Science Department in collaboration with the district's Evaluation Division, to

provide evaluation data for use by district administrators and School Board members.

With the support and assistance of the Evaluation Division twelve components were identified by the Science Department. These twelve components are listed in Figure 23. Each component was assessed according to a scale of "outside intended program" to "getting a good start" to "best practices working." A committee of building principals worked with members of the Science Department to develop behavioral indicators for each of the scalepoints for each of the components. At the same time, the Principal's Advisory Committee described a series of strategies to use for helping teachers with each component. A Principal's Handbook was created which contained the components and strategies, (Jefferson County Public Schools, 1979).

The "checklist" consists of a series of indicators for each component ranging from those illustrative of a teacher "outside intended program" to one who had "best practices working." The checklist user assigns a scalepoint to each teacher for each component. Figure 24 (a-c) displays three of the twelve components on the checklist.

Data Gathered Utilizing the Checklist

Instruments and data recording sheets for use in monitoring the extent of implementation of the program were developed. These included a focused teacher interview, a classroom observation checklist, a focused principal interview, and a focused media specialist interview. Data were gathered for ninety-two teachers in eleven schools. Two hundred seventy-nine classroom observations were made (approximately three per teacher). Data were reported by school (see Figure 25), and also for the entire sample (Figure 26). Full sample data were also displayed by component, as in Figure 27.

How Data Were Used

Data were used in several ways. First, they provided a description of the extent of implementation of the curriculum in the county and so formed the basis for an evaluation report to district administrators (Darnell, C.D., 1979) and a research paper discussing implications of the findings (Loucks, S. & Melle, M., 1980.). Data for individual schools were shared with principals and staffs, and subsequent activities in each school focused on components needing the most assistance. The principal's handbook and the assessment instruments also became the vehicle for a systematic assessment program in a set of additional schools. In this program, teachers became partners in assessing their use of the components, and use was also monitored by principals and science staff. Assistance in the form of consultation, training, or additional resources was given by science staff based on the assessments.

Discussion

This checklist was developed by the central office purely from a fidelity perspective: what does ideal use of the program look like, and what are intermediary steps on the way to ideal? The use of the checklist has been targeted at helping teachers reach a more ideal configuration of the program components.

The checklist departs in several ways from the suggestions in this manual. First, it was developed purely from the developer's perspective, using the science department's description of best practices, and scaling components from best to less than best practices. No major effort was made to observe a variety of teachers to record and incorporate teacher variations within each component, although it should be noted that Science Department Staff typically spent a lot of time in classrooms and so probably had a sense of teachers' variations. The

result, however, was a "more or less" perspective for each component rather than nominal variations.

Second, three of the components (#6-8) are clearly implementation requirements. These we would normally not include in a configuration checklist, since they do not represent the actual use of the innovation by the teacher. Rather, they are part of the preparation or support structure for use.

Whether or not this checklist departs from our recommended model, it has been an extraordinarily useful tool for the school district. It allows teachers to understand central office expectations. It provides a tool for dialogue between teachers and principals and science staff related to the county's science curriculum. More importantly, its use allows facilitators to assess teachers' needs, so that appropriate training, consultation or resources might be delivered. Lastly, a clear picture is possible of whether, and to what extent, program implementation has been accomplished.

COMPONENTS OF THE SCIENCE PROGRAM

I. Program components over which district policy or procedure appear to have the major influence for implementation in the classroom:

1. The recommended percentage of teaching time during the day is devoted to science. An average of 15% of the student's day (10% for third grade) should be devoted to science.
2. Science is taught according to the district guide. During the school year the teacher teaches all units, all objectives of each unit and 90% of the activities.
3. Students' learning is assessed according to the district science guide. According to a review of each unit, the teacher uses the guide assessments with students 85% of the time.
4. Basic skills, as differentiated by the continuum in each curriculum area, are being integrated into the science program. The basic skills keyed in the guide are being introduced or stressed in their subject area time allotment while they are being reinforced during science instruction.
5. The outdoors is used as a classroom when recommended. Whenever outdoor activities are recommended as part of a unit, they are always included.

II. Program components over which the building principal and the teacher both have a major responsibility for influencing implementation in the building and classroom:

6. All materials, equipment and media are available. Appropriate commercial guides and the district guide are available for use. Enough materials are available for individual or small group usage. A storage system of logical sequence is established.
7. Principals have arranged for release of teachers for the total inservice training package and have allocated financial support to the program.
8. Long and short-range planning is evident. The year's schedule is written out and being implemented by the teacher or the team. This schedule reflects attention to seasonal demands, sharing of materials, and maximum utilization of space and personnel. Before each unit is taught, overall planning for that unit takes place.

III. Program components over which the teacher has the major influence for implementation in the classroom:

9. Class time in science is used efficiently and effectively (time on task). At least 75% of the class time is devoted to exploration, pupil interaction, recording data, discussions and listening to each other. An efficient management system for distribution and clean-up of materials is evident.
10. Teacher-student interaction facilitates the program. Using the students' language, the teacher shares with students the objectives of the units. Discussion techniques include: neutral rewarding, wait time, questions above recall level, maximized use of student-student discussion; and data sharing.
11. The classroom environment and arrangement facilitates student-student interaction in small groups. Furniture and materials are arranged in order to facilitate small group interaction. Student behaviors include sharing of materials, listening to each other, working together towards a group goal, and interacting with each other (cooperative learning). Students are task-oriented most of the time.
12. The instruction in the classroom follows the stages of the learning cycle in science: exploration, concept formation, concept application.

Figure 24a:

2. IS SCIENCE TAUGHT ACCORDING TO R-1 GUIDE?

Outside Intended Program	Getting A Good Start	Best Practices Working
----- 1 -----	----- 2 ----- 3 -----	----- 4 ----- 5 -----
A. During the school year, the teacher covers less than 85% of the objectives and activities. The teacher may or may not cover units in the guide. If units are taught, more activities are omitted than included.	A. During the school year, 85% of the objectives and 85% of the activities are taught. The teacher covers the units as written and spends the allotted time (See #1). Some units may be abbreviated because an extra amount of time was spent on another unit.	A. During the school year, the teacher teaches all units, all objectives of each unit, and 90% of the activities. At the end of some objectives, teacher uses Optional Activities to extend the unit with small groups of students.
B. Objectives or activities are not sequenced. Objectives may be used, but teacher-made activities mainly are used to accomplish the objectives.	B. The teacher can: --point in the guide to the objective that is currently being taught. --describe what objectives and activities went before and what objectives will come after current activities.	B. The teacher can relate what objectives is being studied and how the activity pertains to accomplishing the objective. He/she can relate what objectives preceded and will succeed the objective being taught.
C. Supplementary media is frequently used, in addition to or to the exclusion of, hands-on activities.	C. Teacher uses supplementary media sparingly.	C. Teacher uses supplementary media sparingly and can demonstrate how supplements which are used support the objectives being taught.

Figure 24b:

4. ARE BASIC SKILLS BEING INTEGRATED INTO PROGRAM?

Outside Intended Program	Getting a Good Start	Best Practices Working
----- 1 -----	----- 2 ----- 3 -----	----- 4 ----- 5 -----
The basic skills lesson dominates the science lesson. The primary purpose and outcome of the lesson is to teach basic skills rather than science.	The basic skills keyed in the guide are being <u>introduced</u> or stressed in their allotment while they are being <u>reinforced</u> during <u>science</u> lessons some of the time.	The basic skills keyed in the guide are being <u>introduced</u> or stressed in their <u>subject area</u> time allotment while they are being <u>reinforced</u> during <u>science</u> lessons.

Figure 24c:

10. DOES TEACHER-STUDENT INTERACTION FACILITATE PROGRAM?

Outside Intended Program	Getting A Good Start	Best Practices Working
----- 1 -----	----- 2 ----- 3 -----	----- 4 ----- 5 -----
A. Teacher does not share with students the objectives of the units or relate the activities to the objectives. B. No discussions dealing with concept formation are held.* Few data-sharing sessions are held. or Teacher lectures (with a possible "fill in the blanks" done by students) are termed "discussions." These usually involve learnings at the lowest level of Bloom's taxonomy. Student reports or research work are included here. or Discussion dominates the learning strategies to the exclusion of activity-based strategies. These "rap sessions" are based on opinion, thoughts and feelings, rather than data. *Refer to Component #12	B. Teacher shares with students the objectives of the units and relates activities to the objectives only part of the time. B. Conversations are limited to data-sharing with only occasional discussions of concepts. or Teacher is using some of the discussion techniques listed in "best practices."	A. Using the students' language teacher shares with students the objectives of the units and relates activities to the objectives. B. Conversations among students and between teacher and students are an important part of the learning cycle and fall into two categories: 1) Discussion -- either during or after individual and group activities, students exchange observations and ideas with other students and the teacher as concepts are introduced and developed. Discussion techniques include: --Neutral rewarding - no reward during inquiry discussions --Wait Time --Questions above recall level and of a divergent type --Maximized use of "basketball discussions": (Teacher to student to student to teacher interchange.)

Figure 25:

82

Sample Building Summary Sheet

	OUTSIDE PROGRAM	GETTING A GOOD START	BEST PRACTICES WORKING WELL ON THE WAY		
	1-----	2-----	3-----	4-----	5-----
1. Time is devoted to science	*** **	*	**	*	**
2. Science is taught according to R-1 Guide	*** ***	*** **			
3. Assessment of pupil learning	*** ***	*** **			
4. Integration of basic skills	*	***** *****	*		
5. The outdoor classroom is used as recommended		*** **	*** *	**	
6. Recommended materials, equipment and media are available			*** **	*** *	**
7. Inservicing and financial arrangements have been made		*	*** **	*** **	
8. Long and short range planning		***	*** ***	**	
9. Use of class time	**	**	***	**	*
10. Teacher-Pupil interaction facilitates program	***	***	***		
11. Classroom environment facili- tates program		***	***	***	**
12. Instruction is sequenced to facilitate the guided inquiry learning approach	**	*** *	***		

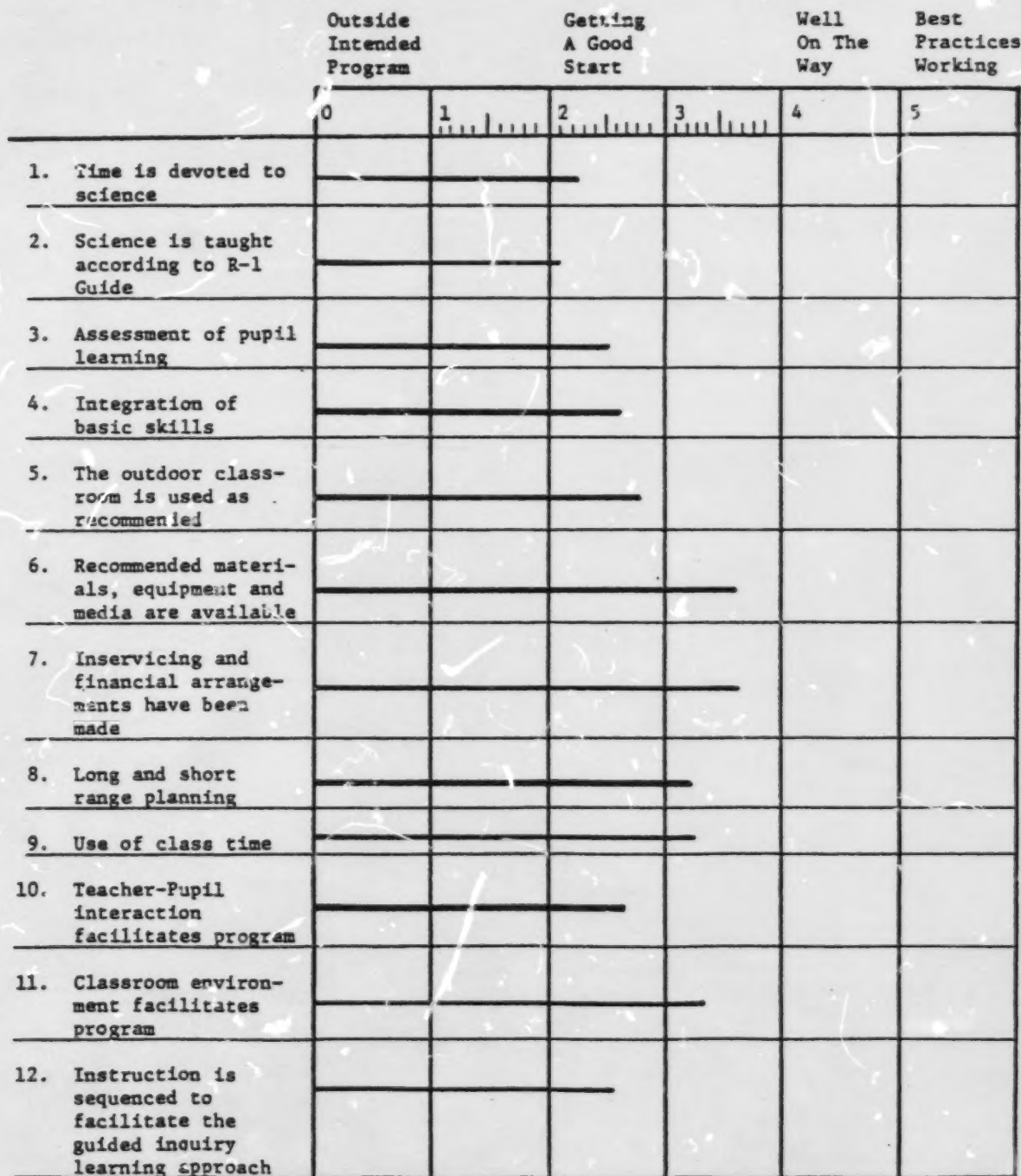
School Winter Elementary Teacher all 3, 4, 5, 6 teachers

R-1 Program Evaluation
Revised Elementary Science Program Evaluation.1/80

Figure 26:

83

The Average Extent of Implementation on Each Component for All Classrooms



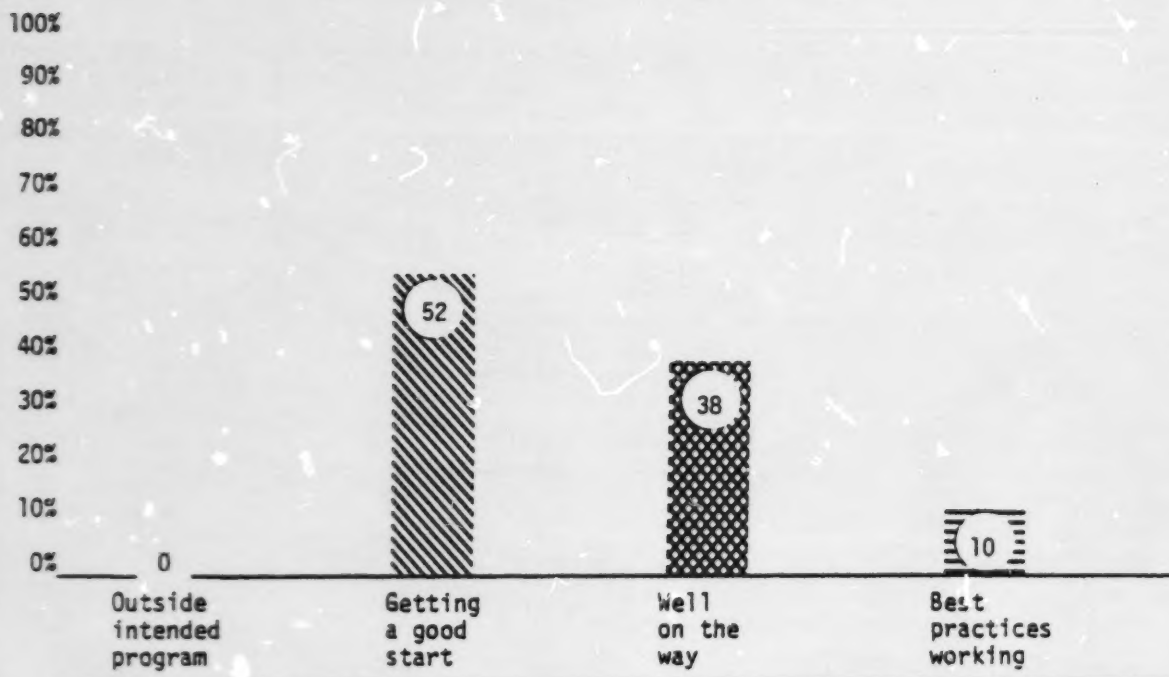
N = 113

Figure 27:

84

PERCENT OF IMPLEMENTATION OF THE REVISED ELEMENTARY SCIENCE
PROGRAM FOR COMPONENT #6 IN JEFFERSON COUNTY SCHOOLS, PHASES I AND II

COMPONENT #6. RECOMMENDED MATERIALS, EQUIPMENT AND MEDIA ARE AVAIL-
ABLE AND ORGANIZED FOR SMOOTH IMPLEMENTATION.



CRITERIA

- | | | |
|---|--|--|
| <ul style="list-style-type: none"> . Current commercial guides unavailable to teachers. . Materials & equipment not available at right time. . Haphazard storage system. | <ul style="list-style-type: none"> . Current commercial guides and R-1 Guide must be shared. . Teacher aware of plan for making all materials available. . Some storage organization, but not operating smoothly yet. | <ul style="list-style-type: none"> . All science teachers have commercial and R-1 Guides. . Adequate materials for groups of 3-5 students. . Storage system working smoothly. |
|---|--|--|

4. INNOVATION CONFIGURATION CHECKLIST USED FOR RESEARCH ON CHANGE IN SCHOOLS: TEACHING OF WRITING, HACIENDA LA PUENTE, CALIFORNIA

The Teaching of Writing Checklist for Hacienda La Puente School District, California, was developed for the purpose of measuring change within initial implementation of the innovation as a part of a research project conducted by the CBAM, R&D Center, University of Texas. General descriptions of innovation use were written up from the checklist and returned to principals as a part of the study design. The study, called the Principal-Teacher Interaction Study, is concerned with the impact of principals on the Improvement of Practice in Schools.

The Innovation

Teaching of Writing is a k-12 program designed to complement the scope and sequence of the language arts curriculum already in place in area schools. The goal of the program is to familiarize teachers with the need for continual development of writing skills and to provide some suggestions on the scope and sequence of writing activities. Further, it was intended to provide some ideas for the remediation of writing problems that became evident with the introduction of the California competency tests.

The program evolved from the ideas presented to Hacienda La Puente District Teachers and Resource Personnel when attending the Summer Institute at California State, Northridge, on the Bay Area Writing Project, (Gray, J. R., 1974). District teachers were selected to attend by District administration with the intention that they act as facilitators for the growth of writing at their individual schools. As not all individuals who attended felt able to do that, teachers and resource personnel developed a writing sourcebook--called

A Sourcebook For The Teaching of Writing in Grades K-6 (Keohane, F., and Naylor, K., Hacienda La Puente Unified School District, 1930) to provide some direction for composition writing activities. The Sourcebook was distributed at all District elementary schools with implementation assisted by an initial explanatory workshop as well as follow-up workshops by resource personnel at most schools.

The Teaching of Writing Program as developed in the Sourcebook, (1) stresses writing every day in some way, ideally in a journal or notebook; (2) emphasizes the writing process as it pertains to various grade levels--including pre-writing activities, actual composing tasks, and a method of evaluation; (3) divides tasks into domains or areas to which such tasks may be focused; and (4) uses a process of evaluation developed by the program which includes competency requirements. In most instances teachers are allowed to choose how much of the program they wish to be involved in. In general, the program may be said to be a guide rather than something requiring specific activities.

Development of the Checklist

Work was begun with Hacienda La Puente School District as a part of a research study of the impact of the principal on the Improvement of Practice. The study focuses on the interactions between a principal and his/her staff in relation to a specific innovation. Hacienda La Puente School District was in the process of implementing Teaching of Writing and, therefore, the study focused on the kinds of interventions necessary to deal with teachers' concerns, material problems, and needs for information or support during the first year of implementation.

The research design required that the teachers and the principal be interviewed at three points during the year in order to gather information on the

process of implementation, whether the innovation was present in the classroom and any changes in its use, the "Level of Use" (LoU) of teachers relevant to the innovation, and any changes in LoU over time, as well as context and intervention information. The initial interview session was conducted in May, 1980, with follow-up interviews in October 1980, January, and April, 1981. A checklist was developed from which to focus probes and record information or changes in use over time.

Initial information about the Teaching of Writing program as it was conceptualized by district developers was derived from interviews conducted in the spring of 1980, and from some written information on the innovation. Over the summer program developers planned to package the information in a form which would be more accessible to teachers, and also planned their pre-school inservices. The Sourcebook that was presented to teachers in the Fall of 1980 was the end result of spring and summer work. Since initial teacher interviews occurred before the finalization of program information (Spring 1980), the checklist had to be revised for the fall data collection.

Use of the checklist was further complicated by the nature of the program itself. As the program was designed to complement or elaborate on what the teacher may already be doing in his/her classroom, it was important for the final data collection to get a sense of what present practice consisted of, as well as what would indicate integration of new ideas and materials based on the writing program. In some cases teachers themselves had problems differentiating between what they always did and what would be considered new or related to the innovation. The checklist went through three revisions. Figure 28, the final revision, was used in the fall 1980 data collection. The Checklist as shown in Figure 28 was designed to capture first what was being done in present practice as compared with what the Teaching of Writing program considered important, and second, components focused to show increasing involvement with speci-

fic attributes of the Writing program. For ease in interviewing, component titles were expressed as direct probes, e.g., "Are you using the Sourcebook to plan your writing activities?"

Data Gathered Utilizing the Checklist

The Teaching of Writing Checklist was used in three schools in the Hacienda La Puente School District over the 1980-81 school year. Within these three schools, fifty-three teachers were interviewed. As described earlier, the checklist was designed to measure present practice, implementation of program-directed changes, and any modification of how writing was taught over time. Data from each interview session was coded and entered into a computerized data base, along with each individual teacher's Level of Use rating and Concern profile. As the checklist was primarily descriptive in nature, interviewers could mark more than one variation within a component heading. General descriptions of innovation use were written up from the checklists and returned to principals as part of study feedback to them. Principals could then apply that information to any interventions they wished to make with respect to the innovation, or not, as they wished. Part of the project design involved this feedback.

Discussion

As the Principal-Teacher Interaction study is still in progress at this writing, the degree of success of the checklist is open to question. Difficulties in developing and using the checklist have been several. First, implementation was in the beginning stages, and the definition of the innovation was still in process. In fact, the innovation was, in some cases, not very different from what may already have been in place in the classroom -- teachers were teaching writing. The program, however, would have them expand composition into the various domains, or types of writing. Yet, the checklist had to provide a

specific enough orientation to the goals of the program to differentiate between what was normal practice and what was an effect of implementation. The need to provide feedback to principals about writing practice further compounded difficulties. And finally, the questions designed to obtain information for the checklist were embedded within an interview which had two other major sections; therefore, the time spent on the checklist questions was shorter than desired.

In format, the checklist combines some of the points that are discussed in the manual--single-dimension variations under component headings, checking for more than one variation to allow for a total description of component use, formalizing component probes, allowing questions to follow in a logical sequence, forming components to line of questioning, leaving components open-ended to allow for other variations, using the checklist in an interview format, and numbering components and variations such that information may be transcribed to computer, if necessary. Developing the checklist itself proved a valuable exercise within the data collection development in that it made the innovation more concrete for study participants. It allowed for better conceptualization of what the innovation might be if teachers choose to broaden their classroom practice by implementing ideas suggested in the Sourcebook. As the innovation had the potential to be ambiguous in actual practice, this became important to the actual data collection.

Hacienda La Puente Configuration Checklist

WRITING FOR COMPETENCY

HACIENDA LA PUENTE

REVISED CHECKLIST
10/6/80

Teacher _____

School _____

Date of data collection _____

Interview _____

Rater _____

Date of Coding _____

1. GRADE LEVELS: K 1 2 3 4 5 6

2. Which writing skills are being taught in your classroom?

☐ oral language
☐ teacher writes words, kids copy
☐ kids write words
☐ simple sentences
☐ grammatical exercises

☐ single paragraphs
☐ several paragraphs
☐ longer written exercises (e.g. theme)
☐ proof reading
☐ editing
☐ rewriting
☐ other _____

3. How frequently do you have writing instructions? 0 ½ 1 2 3 4 5 times a week

4. How often do students do some kind of writing activity (diary, journal, non-workbook activity)? 0 ½ 1 2 3 4 5 times a week

5. Are you familiar with the District Sourcebook for teaching of writing?

☐ yes ☐ no

6. Are you using the Sourcebook to plan your writing activities?

☐ yes ☐ no

7. If yes--how do you use it?

☐ just looked it over
☐ picked out a few ideas
☐ used at least one lesson plan from book
☐ used it on a regular basis for instruction
☐ base writing curriculum on it
☐ other _____

8. COMPOSING TASKS: THE USE OF DOMAINS:

A. sensory/descriptive

1. ☐ creative writing
 2. ☐ descriptive writing

B. imaginative/narrative

3. ☐ stories
 4. ☐ poetry
 5. ☐ narrative

C. practical/information

6. ☐ letters
 7. ☐ reports

D. analytical/expository

8. ☐ essays
 9. ☐ reports

9. Teacher uses domains such that clear content falls in one domain area.

_____ yes _____ no

10. How do you evaluate writing?

EVALUATION OF WRITING

- _____ Teacher uses own judgement
- _____ Teacher uses rubric-point marking system
- _____ Peer evaluation
- _____ Teacher conferences with individual student
- _____ Checklist is used by student to evaluate own work
- _____ Checklist is used by teacher to evaluate student's work
- _____ Other

11. Do you display or publish writing products?

PUBLICATION/REINFORCEMENT OF WRITING

- _____ Class magazine or newspaper
- _____ Class bulletin boards
- _____ Student folders
- _____ District publication: REFLECTIONS
- _____ Swap writing between classes or schools
- _____ Individual or class books--collection of works
- _____ Other

12. Is writing taught separately or as a part of other curriculum areas?

INTEGRATION OF COMPOSITION WITH OVERALL CURRICULUM

- _____ Writing is dealt with as a separate subject
- _____ Writing is a part of language arts or reading activities
- _____ Writing is a part of most subject areas
- _____ Writing is a part of every subject area

13. What are you doing this year that is different from last year in writing?

1980, CBAM: This checklist was developed by S. Stiegelbauer, T. Griffin, and G.E. Hall of CBAM based on interviews with Hacienda La Puente teachers and information contained in the district's Sourcebook (Hacienda La Puente District Schools, 1980).

5. USE OF A COMPONENT CHECKLIST FOR RESEARCH AND DISSEMINATION: A SKILLS ACHIEVEMENT MONITORING SYSTEM (SAM)

The Concerns-Based Adoption Model (CBAM) staff worked with District evaluation staff to assess a mathematics monitoring system, with respect to the extent of implementation of the system and the relationship of implementation to student achievement outcomes. Checklist and Configuration work with SAM was used also by Developers for Federal validation application of it as a model program.

The Innovation

Beginning in 1975, a Skills Achievement Monitoring System (SAM) was developed for the purpose of assessing mathematics skills of students in elementary and secondary schools in a local school district. The SAM was developed by classroom teachers with assistance of an evaluation specialist and a math specialist. All of the district's teachers, in grades 2 through 8, were asked to identify the most critical math skills for their respective grade. After grade level consensus was reached, a representative group of teachers, with the specialists, constructed items to measure each skill. These items represent the content of the SAM tests. The monitoring system as finally evolved consisted of these criterion-referenced tests, a computer program for scoring the tests and printouts of test results.

Teachers were given an important decision-making role with respect to use of the SAM. District personnel felt that the system would best serve teachers if they had the freedom to use it in their own self-prescribed ways. Specifics on how to use the SAM were not handed down by the district. As a result, teachers used it in a variety of ways, although it was believed that test results

would identify students who needed instruction on specific objectives and would suggest where instruction could be individualized. A key ingredient in the SAM implementation was the service of a district math coordinator who every six weeks personally delivered the computer printouts (processed by the district) to each teacher in his or her classroom. These visits were designed to explain the test results, answer questions and provide help. The math coordinator supported teachers as they implemented the SAM in their own personalized way and encouraged teachers to use the SAM test results in conjunction with other available student data.

Development of the Checklist - 1978

In 1978, the extent to which the SAM had been implemented in classrooms was assessed in order to evaluate the impact of SAM on the math achievement of pupils. The district wished to know whether differences in student achievement might be attributable to differential use of the SAM. The district contacted the Concerns-Based Adoption Project at the Research and Development Center for Teacher Education at the University of Texas at Austin to assess Levels of Use of the innovation and to investigate the different ways in which the innovation was being used, i.e., to ascertain configurations of the SAM.

Use/nonuse criteria for the LoU were defined by district evaluation personnel. A "user" was a teacher who utilized the SAM test in instructional decision-making; a "nonuser" was a person who administered the SAM tests, received the results, but took no subsequent action based on the results.

The development of a checklist was more difficult as the developers of the SAM did not specify teacher behaviors, except to say that they expected the teachers to use the printouts to guide their math instruction. A discovery approach with the teachers was used to define the components of the innovation

as well as to describe teacher behaviors. As a starting point, district staff involved with the development and implementation of the SAM were asked: What are the critical components of SAM? What might be observed when the SAM is operational with classroom teachers? What would teachers, pupils and/or others be doing? Based on responses to these questions and the interviewers' prior experience with a similar math program configuration search, a comprehensive checklist of all likely components and variations was prepared.

Use of Checklist

The checklist was used to structure interviews with a number of teachers using the SAM. Information gained in the interview resulted in the elimination of some components and a more orderly and logical sequencing of the remaining components. Figure 29 represents this configuration checklist. This checklist was used to codify the practices of 71 teachers who described their use of SAM during an LoU interview. Each teacher was assigned to a configuration group: "minimal use," "mixed use," and "committed use" on the basis of a clinical analysis of the taped interviews.

Use of Data - 1978

The Levels of Use ratings demonstrated that all the teachers did use SAM; that is, every teacher took some action based on the results of the SAM tests. Analyses of student achievement data indicated that increased use of SAM contributed to student learning (Reidy & Hord, 1979). A state department team validated SAM as a model program and provided funds for a diffusion grant to help schools within the state adopt SAM for their use.

Development and Use of the Checklist - 1979

In 1979, as part of a second evaluation of the SAM in preparation for national validation as an exemplary program, Level of Use interviews were again employed to describe the current state of implementation. In addition to LoU ratings of each teacher, the interview was again expected to reveal the extent to which teachers relied on the SAM to guide their math instruction. Analyses of data collected in the interviews would indicate if there were discernable patterns of use, or configurations. The sample of teachers was expanded to 96 and included nine teachers who were new to SAM.

The attempt was made in the interview to gather more detailed information on what teachers did with the SAM results. The interview tapes were reviewed in detail, and all teachers' behaviors were noted. Redundancies were removed, and a list of 145 items were extracted as exemplars of teacher practices in relation to the SAM. These items were edited and collapsed into twenty-nine statements which represented the variety of teacher practices or behaviors specified by the teachers. The refined configuration checklist contains the 29 items arranged into five groupings (See Figure 30).

Since the 29-item checklist was not available at the time of the interviews, it was not possible to specifically ask about each of the items when talking to the teachers. Even so, it seemed appropriate to make inferences on those items which were not specifically addressed in the interview. When the 29-item checklists were filled out, raters marked every item as True or False, and also indicated whether data were specifically available to make that rating. Making these inferences was a difficult task; the failure of a teacher to mention the presence of a particular practice does not imply that the teacher does not engage in that practice. However, each interviewer had made a rather thorough attempt to get each teacher to describe his or her use of the innovation in detail. The checklist used in the interview contained the same cate-

gories of behaviors as the 29-item checklist. In every interview, the teacher was asked specific questions about the use of SAM objectives, instructional materials, testing, printouts, and remediation. Most teachers gave very specific descriptions of their practices in the classroom.

Six interviews were independently rated by a second person to assess the reliability of the ratings. On these tapes, there was 87% agreement on the True/False rating for items on which one or both raters indicated an inference was necessary. Ninety-four percent agreement was found on items; both raters agreed no inference was necessary. These statistics convinced us that very good reliability of ratings was being maintained even under "high inference" conditions.

Analysis of Configuration Checklist Data - 1979

Using ratings on each of the 29 items, a value of one (1) was assigned for items marked "true and a value of two (2) for items marked "false." Teachers were then clustered into groups which had similar practices. In order to ensure that the groupings were related to the extent of implementation, each teacher was assigned to a high, medium, or low implementation group by the person who had personally interviewed that teacher. These assignments were used as starting points in a non-hierarchical cluster analysis as shown in Figure 18 in the Data Analysis Section. The procedures used were developed by Forgey (1965), and programmed by Anderberg (1973). Once teachers had been assigned to one of the implementation groups, analysis was done to assess the relationship of teacher's configurations to student achievement with some surprising results. For more information on the procedures and analysis see George and Hord's "Monitoring Curriculum Implementation: Mapping Teacher Behaviors on a Continuum," 1980.

Implications of the Work with the SAM Checklist

The development of the SAM checklist demonstrates that the behaviors of teachers using an innovation can be defined by interviewing teachers. The developers of the innovation did not formally define the innovation. They facilitated group meetings in which the teachers defined the content of the tests, provided some support structures, and allowed the teachers to engage in whatever behaviors seemed appropriate. One outcome of this approach is that all teachers were "users" of the innovation, because no specific behaviors are identified as necessary for "use" of the innovation. The research previously described illustrates that teacher behaviors can be documented quantitatively based on interviews with teachers.

For Researchers

Researchers might be interested in both the procedures and results of this work. Studies of innovation implementation have repeatedly shown that teachers do not all comply with the demands of even the most structured innovations. The attempt to create "teacher proof" curriculum packages has not succeeded in eliminating variation in use of innovations. In this study it was possible to identify quite specifically those variations in the use of the SAM and those that were positively related to student achievement.

For Staff Developers

Information provided by the configuration checklist could be of great help in staff development efforts. Knowing that certain teachers are or are not engaged in certain practices should enable persons responsible for workshops to do a more effective job. In addition, staff developers can utilize this procedure in order to determine what is actually taking place in the classroom, independent of what the developer expects. The practices of some teachers can also be

communicated directly to other teachers. One of the outcomes of the reported work on the SAM was to send all the teachers interviewed a list of activities extracted from the interviews. Each of these methods of using the program had been "field tested" by other teachers in the district.

For Developers

Finally, the developers of the innovation were able to see which practices had gained widespread use and which seemed to be most effective. Some components of the innovation were either more difficult to implement than others or less acceptable to the teachers. Program developers who are considering curriculum improvement efforts might use this discovery approach to configuration checklist development to identify the practices which are actually occurring before engaging in efforts to define new practices. It may be possible that what is necessary is a dissemination effort in which teachers share what they are doing, rather than undertaking a new start.

1978 SAM Configuration Checklist

School

Name

Grade

Please check any items which describe this teacher's use. A star will indicate emphasis by the teacher.

1. Administers tests:

- ☐ SAM test to math class students
- ☐ Teacher made tests
- ☐ Commercial
- ☐ Other

2. Uses objectives:

- ☐ SAM objectives
- ☐ Textbook objectives
- ☐ Teacher-generated objectives
- ☐ Other

3. Groups for concept development/skills instruction:

- ☐ Large group, heterogeneous
- ☐ Large group, homogeneous
- ☐ Small stable groups (little movement)
- ☐ Small changing groups (frequent movement)
- ☐ Individuals
- ☐ Other

4. Uses test results for instruction:

- ☐ Regroup classes
- ☐ Regroup kids (within classroom)
- ☐ Plan work/activity for individuals
- ☐ Plan work/activity for groups
- ☐ Plan work/activity for total class
- ☐ Other

5. Additional uses of test results:

- ☐ Share with parents by sending a copy home
- ☐ Share with parents in conference
- ☐ Place in child's folder
- ☐ Post on wall
- ☐ Other

6. Moves individuals to another level of test:

- | | |
|--|--|
| ☐ Teacher judgement | ☐ Teacher tests |
| ☐ Daily class work | ☐ SAM test results: |
| ☐ Other | ☐ percentage of items passed |
| | ☐ percentage varies with pupils |

7. Uses instructional resources:

- | | |
|-----------------------------------|--|
| ☐ IMP | ☐ Games |
| ☐ Textbook | ☐ Manipulatives |
| ☐ Workbook | ☐ Teacher made worksheets |
| ☐ Other | ☐ Commercial worksheets |

8. Influences report card grades:

- ☐ SAM test results considered
- ☐ SAM test results not considered

Figure 30:
The 29-Item Configuration Checklist for SAM Math

99

☐ T/F *

Objectives

☐ ☐

1 Uses the SAM objectives as the primary curriculum guide for math.

☐ ☐

2 Devotes class time to teaching some or all SAM objectives specifically.

☐ ☐

3 Increases attention to teaching SAM objectives immediately previous to SAM testing (i.e., "preps" for SAM tests).

☐ ☐

4 Teaches math objectives other than SAM objectives (whether or not SAM objectives are taught).

☐ ☐

5 Instructs resource room students in SAM objectives.

Instructional Materials

☐ ☐

1 Uses pre-packaged materials (IMP or similar) keyed to SAM objectives for ongoing math instruction.

☐ ☐

2 Uses personally grouped materials keyed to SAM objectives for ongoing math instruction.

Testing

☐ ☐

1 Administers tests specifically focused on SAM objectives between SAM tests.

☐ ☐

2 Administers other math tests besides SAM tests.

☐ ☐

3 Administers more than one level of the SAM to individual students (i.e., a student takes two SAM tests simultaneously).

☐ ☐

4 Moves students from one level of the SAM to another during the year.

Printouts

☐ ☐

1 Sees that students each receive a copy of each SAM printout.

☐ ☐

2 Provides that each student has a readily accessible record of performance (printout or chart) on previous SAM tests.

☐ ☐

3 Expects students to take each (every) printout to parents.

☐ ☐

4 Sends printouts home with students at end of year (regardless of other times).

☐ ☐

5 Requests parents to sign to show they have received printouts.

☐ ☐

6 Shares SAM printouts with child's other teachers (e.g., Title I).

☐ ☐

7 Posts SAM printouts in the classroom (e.g., on the wall).

Remediation

- | | | |
|--------------------------|----|---|
| ☐ | 1 | Requires students to show mastery or work toward mastery of objectives missed on SAM tests. |
| ☐ | 2 | Creates problems or exercises "on the spot" to reteach missed objectives. |
| ☐ | 3 | Uses pre-packaged materials keyed to SAM objectives (IMP or similar) for remediation work. |
| ☐ | 4 | Uses personally grouped materials keyed to SAM objectives for remediation. |
| ☐ | 5 | Reviews SAM results with class as a whole within a few days of their return. |
| ☐ | 6 | Reviews SAM results with individual students within a few days of their return. |
| ☐ | 7 | Focuses remediation on whole class (based on SAM results). |
| ☐ | 8 | Forms small groups based on SAM results for the purpose of remediation. |
| ☐ | 9 | Focuses remediation on individual students (based on SAM results). |
| ☐ | 10 | Compares previous results on SAM test with current results. |
| ☐ | 11 | Assists students to be aware of progress made since last test (or over the year). |

SECTION IX: APPENDIX

Sample Interviews

1. Interview with Developer, APL Project, University of Texas, Austin
2. Interview with User, APL Project

The Adult Performance Level Project (APL) is actually composed of two programs: (1) the APL Curriculum Program and (2) the APL Competency-Based Diploma Program. The Curriculum Program has as its essential components diagnosis, prescription, instruction, and evaluation. It may be used in a number of instructional settings, the most common being as a part of a GED diploma course. The Competency-Based Diploma Program includes the Curriculum Program with the addition of Life Skills Activities and Individualized Competencies leading to certification as a high school graduate. The APL Diploma Program is not time-based. Students may complete as quickly as they are able or take as long as they need. Teachers act as facilitators rather than instructors. Students are required to attain mastery of all the steps in the Diploma Program before certification. The diploma is usually awarded by a local high school.

The following interview shows the essential components of the program as the developer conceptualized them, and how those components were translated to the checklist for use within the user interview. The commentary to the right of the text traces the intent of the questioning and notes points of importance. Note that this checklist was constructed largely from fidelity or developer's perspective, as components are those listed by the developer, and variations range from ideal to unacceptable. For a general description of the developer interview and the sequence of questions we refer back to Section IV: Proce-

dure. The checklist following the developer interview and commentary was developed by CBAM staff and the developer and shows variations marked ideal, acceptable, and unacceptable as would indicate a developer's perspective.

The user interview is a transcript of an actual interview between a member of the developer's staff and a user. The interview ends with the beginning of the LoU questions. Again, a commentary is provided to the right. The checklist following the interview indicates the components and variations as marked by the interviewer.

Both these interviews are real. They have been edited to eliminate sections that were long examples of behaviors or comments not related to the questions at hand. In the normal course of an interview such digressions are a part of natural conversation and, for the sake of rapport, even to be encouraged. The intent of this sample, however, is to show how the essential parts of the innovation were delineated by the developer and the interviewer, and later, how the interviewer used the components as a guide to probe for use of the innovation.

Interview	Comments
I: Please start by telling us about the program. D: The APL Project is involved with disseminating a life-coping skills curriculum and/or competency-based high school diploma program to adults throughout the country. There are really two main components of the APL project that we are disseminating. One is the curriculum portion, which is a diagnostic/prescriptive, learning/activities-centered program which is usually instituted in an ABE (Adult Basic Education) or GED setting that is already established in a learning center or some other educational setting. The end product then is the GED, generally. The curriculum addressed each of the 65 APL objectives that were initially identified in our research. Just to give you an idea of what some of the topics are in the APL curriculum, there are five general content areas: consumer economics, occupational knowledge, health, community resources, government and law. As the curriculum writers were writing the curriculum, they realized that some of these objectives just naturally fit together; so it would have been artificial to have developed 65 different modules. They put sometimes two objectives together, sometimes three, so we came up with a total of 41 modules. All 41 modules covering 65 objectives are condensed into eight books. In Consumer Economics there are 15 objectives, so they're split into two books. The same is true of Health, and there is just one book for each of the	The Interviewer asks for a general description of the program. The Developer begins by describing the Curriculum Program.

Interview:	Comments
D: other content areas. I: So, one module would concern only one of the five knowledge areas; it wouldn't be all of them together? D: That's right. One module is just one segment of a knowledge area. For instance, the first one is Advertising Techniques in Consumer Economics, Banking Services, etc. The APL Competency-Based High School Diploma Program -- an integral part of that diploma program is the APL -- goes a little bit further. It has the same diagnosis and prescription as the curriculum program. I: Could you tell me a little about the diagnosis? D: What we do is recommend that they use the content area measures as the initial prescriptive instrument -- if a person can read at sixth grade level. Let me back up and let's look at when a person first comes into the program, the diploma program, for instance. They are explained all the various options available to them, whether it's going back to the regular high-school setting, whether it's the GED program, whether there are night schools available in the area. The CBHD Program -- Competency-Based High School Diploma Program -- is explained to them. All the options available to them in their community are explained. If they decide that the CBHD Program is the one that best meets their needs and resources, then they are given	The Interviewer requests verification of a module's content. The Interviewer requests more information about one part, or component, of the innovation. (See Checklist Component 1: Diagnosis) The Developer describes the Diploma Program as a way of explicating diagnosis.

Interview	Comments
D: even greater detail about what it contains. Everything is out in the open; no surprises are pulled and they know all the competencies they are going to be asked to demonstrate. At some point in time when the counselor feels they will be comfortable and not feel threatened by being given a test, they are given the TABE test -- Test of Adult Basic Education. If they score at least the sixth grade level on the TABE, they are then administered the content area measures. If they score with a reading level of under sixth grade, they would have considerable difficulty with content area measures, and we don't want to frustrate them anymore than is necessary. If they score under sixth grade level on the TABE initially, they are placed in the curriculum modules through a very informal diagnosis, an informal reading and discussion with the counselor and the teacher, perhaps being assessed on the basis of some diagnostic, very short, informal tests that precede each of the content or learning activities in each module. Informal ways like that are used to assess their level and needs, and then they are placed into the curriculum. If they score at the sixth grade level or above on the TABE, they are given the content area measures to determine where they should be placed in the curriculum. The key to this is what we are calling functional competency -- scoring as an APL 3. There are three levels on the content area measures -- Level 1 being persons who need a considerable amount of learning activities;	

Interview	Comments
D: Two, those persons who are marginally competent, but who need some activities; and Three, those persons who may be able to skip the learning activities. I: They can just take a test for the diploma? D: No, that's only one segment of the program. They go to the next phase. They might be able to bypass that segment of the curriculum in that content area. A person doesn't necessarily go through each one of the objectives in each of the content areas. They are given only those learning activities in which they have demonstrated they are a One or Two in that objective. So, it's very individualized and dependent on where they come into the program and the relationship to their skills and knowledge, of how much they go through in the program or how long it will take them in the program. I: How much time do they have to work through a level in an activity area? D: The program is not time based at all. We don't have any minimum time by which they must be through or any maximum times. They can go through it as quickly as they can, or take as long as they need. When a person goes through the learning activities then, and the teacher feels satisfied that that person has mastered the curriculum in those areas where weaknesses were demonstrated initially, the content measures are readministered to the persons in those objectives on which Ones or Twos	Interviewer asks for clarification. (See Checklist Component 2: Prescription) (See Checklist Component 3: Instruction) (Discusses use of curriculum materials)

Interview	Comments
D: were scored. Mastery is attainment of the APL 3 Level in each objective within each content measure. And at that time, when this level is reached, they can then go on to the next phase of the program; they are through with the curriculum program.	(See Checklist Component 4: Evaluation)
I: Do they have to go through all five areas of curriculum?	
D: No, not necessarily. For instance, they might score as an APL 3 in each objective within a knowledge area like Health. They can completely skip that content area, unless the teacher feels it's a fluke, and they would benefit from the learning activities.	(See Checklist Component 4: Evaluation)
I: So, let me catch up. An individual is tested to diagnose his or her entry level; then, based on that, some prescription is made as to where to start with the curriculum, then a follow-through with instruction to mastery of that curriculum area?	The Interviewer checks to see if her or his ideas on what are the essential parts of the innovation are correct.
D: That's it, essentially.	
I: Let's talk about the second part of it, that is, after they get finished with the curriculum part of it.	
D: After they're through with the curriculum part, then they're ready to go into the Life Skills portion of the program. Up until now in the diploma program, the content area measures, the TABE, have all been paper-and-pencil tests. The Life Skills get as far away from a paper-and-pencil type testing situation as possible. We have developed a series of activities, one for	

Interview	Comments
D: each of the APL objectives. There are 42 Life Skills activities, one for each module, plus one. A lot of these ask the client to actually go out into the community and demonstrate that he or she can do these things that people are asked to do every day, such as comparison shopping, or budgeting, contacting insurance people, first-aid measures; but it's still application of what they have demonstrated they can do on a paper-and-pencil test. We're asking them to apply that. Regardless of when a person comes into the program initially, no matter how they score -- they can score as an APL 3 in every content area measure -- they still need to go through all 42 of these Life Skills activities to the satisfaction of the teacher and assessor in the program. I qualified my "yes" to your question of whether this section is after the curriculum because there's a lot of overlap between the Life Skills and the curriculum. There's a Life Skills activity for each objective, and the curriculum is based on the objectives, too. In a lot of instances, especially where the person has gone through a lot of the learning activities in the curriculum, s/he will have already done some portions, maybe all, of a particular Life Skill. For instance, making out the budget is a Life Skill, but they very well might have already done this back in the curriculum. If that's the case, we're not asking them to duplicate what they've already done. If this activity has already been assessed to have	(See Checklist Component 5: Life Skills Performance

Interview	Comments
D: by a local high school within the district that is adopting the program. So, there's no stigma attached. I: I want to know what the individuals do. The student does all this by himself; he uses the curriculum by himself. What is the teacher's role? D: The student can do this by himself, if he has the skills; but he doesn't necessarily have to do it by himself. If he needs interaction with a teacher, the teacher is there to work with him or her as much as need be. He or she could take it and do it all at home. I: It could be a group of students? D: Yes, it could be. It lends itself to group activities. The problem here is that the adult learning centers where most of these adoptions take place are open entry-open exit, so you have people wandering in and out at all times of the day and night. Very few of them come in at the same time each day and are working on the same thing, so it's hard to group. But, if you have some people who do that -- sometimes friends come together -- and they need the same materials and module, or if resource people are coming in to give talks, then that's a good group activity. Generally, it's very much a one-on-one thing. That doesn't mean it's not adaptable to a group situation. The realities of the learning center proscribe against it.	The interview asks for a description of behaviors of teachers using the program. The interviewer is checking for component variations.

Interview	Comments
I: Do you ever have a situation where a teacher will stand up in front of a group of people and teach the same thing?	Again, the Interviewer is checking for variations -- this time, looking for a limit to acceptable variation.
D: Ideally not.	
I: Tell me about the "ideal" versus the "not-so-ideal."	The Interviewer is looking for ideal use according to the Developer.
D: The ideal is to have an open entry-open exit learning center that is open in the daytime and in the evening so if, employed, as many of our adults are, they can come in after work. They come in anytime they want, and they work on whatever they need to or want to. If they need or want help, or if it says "discuss with teacher", and they have to have some interaction, that teacher ideally is available to go from student to student, spending a certain amount of time with each one, giving individualized help they need.	Developer describes ideal use.
I: Is there any situation where teaching to a group is acceptable?	Interviewer continues probing distinctions between acceptable and unacceptable use for the Developer.
D: In a lecture-type situation, or just grouping? Grouping is completely acceptable.	
I: But the lecture situation isn't?	Good probing by Interviewer to determine exactly what is unacceptable.
D: We try not to do it. We try to make this a hands-on program where they're doing things, and they're not just sitting passively listening. We have had some situations in the past -- hopefully they've been corrected -- where that did go on for expediency's sake. They	

Interview	Comments
D: had a large number of students; and they required them to sit, whether they needed it or not, and they listened.	
I: You worked to get that changed? That's not an acceptable way of teaching the program?	
D: It's certainly not the ideal. It's not the way we want it; we don't want it to be a sterile, lecture-type situation. Even if there is a certain amount of lecture, we want a lot of interaction from the students, either asking questions or answering questions, or discussing their experiences, interacting with each other instead of just sitting.	The Developer describes the role of students in the program.
I: So what if a student just sits, does the whole thing by himself, and never interacts with the teacher at all, but uses the packages and materials by himself? Is that acceptable or ideal, not ideal, what?	The Interviewer gives good, clear examples so Developer can continue to be concrete and descriptive. Interviewer is recycling through the components to get variations that range from ideal to unacceptable.
D: It's completely acceptable; I don't know about ideal or not ideal. If he's able to do the work by himself, then fine. He can't do all the work by himself in the Life Skills; he can on the curriculum. But, if we're talking about the diploma program, there has to be a lot of interaction with the teacher and the assessor because a lot of Life Skills say "discuss with the assessor," or "explain." He has to explain some way; you can't do it in a vacuum.	
I: Is there a teacher and an assessor?	
D: We have three job descriptions or positions, but they don't	Developer describes the role of teachers and others in the program.

Interview	Comments
D: necessarily have to be three, distinct individuals. We have a counseling function, a teaching function, and an assessing function. They can be handled, never all by one person, but by two people. One doing the counseling and teaching and one doing the assessing, or however they want to handle it. When programs start out, we suggest that they start out small. Just as a rule of thumb, we say no more than 15 students starting out. If you feel comfortable with 8, fine; don't take all comers first. When they start small, all they need are two people; but as they expand over time, generally they hire more and more people. They might have two or three teachers. I: You're saying those three roles have to be there; it doesn't matter who the individual is or how she or he provides the help. D: Yes, there's very definitely a counseling function, explaining the options of the program and counseling them into which might be most appropriate, of course, with their input. There's the teaching function, and the assessing function in that the assessor is responsible for the final evaluation of the Life Skills, plus the whole Individualized Competency program. All three are in there. I: Is it necessary to be called a user of your program to have both the Life Skills and the Individualized Competency? Could you do one or the other? D: Not for a diploma program; it's necessary to have both.	Note that these roles are not differentiated on the checklist, although they might have been.

Interview	Comments
I: So it would be unacceptable to have one without the other? D: Right.	Again, the Interviewer is checking for the range of variations allowed.
I: Is there ever a situation where a teacher will decide they're going to spend two weeks on this content area -- or say a month or two months -- then testing on the same day, then move to another content area and let the students pace themselves within that framework?	Interviewer picks up on another component: student self-pacing.
D: Good luck! It's happened, and that was the one situation where we sat down and explained that that's not the ideal situation and wasn't there somehow to re-vamp it, and they did.	Clearly unacceptable no to have self-pacing.
I: Students are supposed to be self-paced; they are supposed to be able to do as much as they can wherever they can and go on.	(See Checklist Component 8: Pacing)
D: Right, that the ideal -- not to be held back because the rest of the class isn't up with them yet or not having to charge forward when they're not ready.	
I: Is it really open entry-open exit to the point that it does not matter how long it takes a student? They can string it out over years?	
D: Yes, with the exception of the CETA program where they are tied to time. We have talked to the CETA people who said they were giving only six months. They realize there may be some overlap there because we can't guarantee that anybody is going to be through in six months. A lot of them will be, but we cannot guarantee anything, and we	

Interview	Comments
D: are not going to. That's the only time I can think of when they're working with some sort of time constraint. The others realize and are working with the fact that someone can take three years if they need to. We've had some, not many, who don't come in very much and just sort of fritter around. I: What else can you think of that we haven't asked you about? D: Let me think. You know, I have a little book you might want to read. When you read it, you'll be seeing many of the things I've already said, but then it might cue you to some questions. I: That would be helpful, yes. Let me see if I am on target with what you would consider the important parts of the APL program. The student is at first tested to see where they would place in the program, then some diagnosis is made as to placement and subsequent instruction in APL content areas, then some evaluation is done to test mastery in the content areas -- up to this is what you would consider the APL Curriculum portion. D: Yes. I: Then, added to that to make it the Diploma program, are the Life Skills and Competency expectancies according to an individual's choice. Given completion of all that, certification by a local high school follows. D: I think you're on target. I: There are some things about which I'm a bit confused. I didn't feel that you were as	Open-ended probe to be certain that no important components or variations were missed. Interviewer again reviews the essential parts of the program as she is perceiving them. The Interviewer clarifies the difference between the Curriculum program and the Diploma program.

Interview	Comments
I: definite about how the program should be run -- rather, exactly how students and teachers should act while working in the program.	The Interviewer is distinguishing between essential components and related components.
D: I do think that we are more flexible as to the actual structure of the program, given the criteria you mentioned are met. Ideally, student learning should be self-paced, beyond that there are many ways that it might be organized. Student activities might be partially paced by the student and partially by the teacher. We see the teacher as a facilitator more than anything else. As I think I mentioned, we do not want a traditional classroom for these students. But, there may be times when the teacher may need to direct activities for efficiency's sake, but ideally, they shouldn't all the time.	The Developer said there was more flexibility in Components 8 and 9; therefore, they were related rather than essential.
I: Would you say that student self-pacing and teacher facilitation are critical parts of the program? Is it necessary that that approach be taken?	
D: Well, not critical, but it is important. But like I said, if the program itself is implemented -- that is, diagnosis, prescription, instruction of content areas, evaluation, life skills, and individual competencies -- we are more flexible about student and teacher roles.	
I: I think I have the idea. Let's see if I can think of anything else... What about required materials?	
D: There will be eight books. We are in the process of having them published now. There are	The Interviewer asks about materials necessary to implement the program. As these are prerequisites, they

CONFIGURATION CHECKLIST

Adult Performance Level (APL) Project

The APL Project is composed of two programs: 1) the APL Curriculum Program, and 2) the APL Competency-Based Diploma Program; therefore, "acceptability" is determined according to the program under consideration. When the APL Curriculum Program is implemented alone, Components 5, 6, and 7 are not applicable.

Component 1: Diagnosis

1		2
Students are diagnosed in skill areas of reading, language, and mathematics, and in content areas of Consumer Economics, Occupational Knowledge, Health, Community Resources and Government and Law.	* * *	Students are not diagnosed in all aforementioned skill and content areas.

Component 2: Prescription

1		2		3
All or most of student activities are based on the result of diagnosis.	*	Some student activities are based on diagnostic results.	**	No student activities are based on diagnostic results.

Component 3: Instruction

1		2
APL curriculum materials are used when appropriate.	* * *	APL curriculum materials are not used even when appropriate.

Component 4: Evaluation

1		2		3
Students achieve mastery when they score APL 3 in each objective within each	* * *	Assessment of mastery is sometimes according to APL requirements and sometimes according to other criteria.		Assessment of mastery is totally based on criteria other than APL requirements.

Component 5: Life Skills Performance

1	2	3
Students are expected to provide evidence of satisfactory performance for each of the Life Skills.	Students are expected to perform all APL Life Skills, but evidence is not required.	Students are expected to perform some Life Skills, but not all.
	4	
	Students are not expected to perform Life Skills.	

Component 6: Individualized Competency Assessment

1	2	3
Each student must demonstrate an individualized competency in an area of his/her choice from among the given options.	All students must demonstrate competency in an individualized area, but area is chosen by staff member (but still approved by student).	Every student is not required to demonstrate an individualized competency.

Component 7: Certification

1	2
Upon satisfactory completion of CBHSD Program, graduates are awarded a regular high school diploma.	Upon satisfactory completion of CBHSD Program, graduates are awarded an adult high school diploma.
	3
**	Upon satisfactory completion of CBHSD Program, graduates are awarded a high school equivalency certificate.

RELATED
COMPONENTS:

Component 8: Pacing

1	2	3
Students proceed at their own rate through APL materials and activities.	Some student activities are self-paced and some are paced by teacher.	Students proceed at pace set by teacher.

Related Components Cont'd.:

Component 9: Teacher Role

1		2		3
Teacher acts as facilitator most, if not all of the time (responds and is available for help when needed).	*	Teacher acts largely as facilitator and also provides optional classroom instruction.		Teacher acts as facilitator some of the time and directs activities at other times.
		4		
	**	All instruction is directed by the teacher.		

CODE: To the left of * is ideal practice.
To the left of ** is acceptable practice.
To the right of ** is unacceptable practice; i.e., developer's "point of drastic mutation."

Interview	Comments
I: Are you currently using the APL Competency Based High School Diploma Program? U: Yes, we're currently using it as part of a program to have students obtain their high school diploma exclusively.	Interviewer establishes if respondent is user of innovation.
I: Is it O.K. if we use the term CBHSD to stand for the Diploma program from now on? U: Yes, that's fine.	Interviewer establishes name by which to refer to program.
I: O.K., great. Would you please describe for me how you're using the CBHSD program?	Interviewer asks for open-ended description of use.
U: Right now we're exclusively dealing with Manpower clients; they are at a skills training center obtaining vocational competencies. The students who are referred to us do not have their high school diplomas and wish to go back to school to obtain that as part of their Manpower training program. Right now they're getting a release time of approximately between six to eight hours a week. They're getting release time from their vocational training to come over here to the APL program to work on Life Skills, workbooks, testing, etc. This started about two months ago. Prior to that we were getting them for only one day a week, half a day, or approximately three to four hours.	Interviewer may fill out part of Checklist based on initial response; clarification of component variation occurs later with specific probes.
I: So, you've actually been implementing for a total of about three and a half months.	
U: That's correct.	

Interview	Comments
I: Tell me, what do you actually do in the Learning Center when one of the students comes in to you.	The Interviewer asks for a more specific description of how the innovation is used.
U: Prior to a student coming into the Learning Center, our counselor would go to the Manpower training site when students are referred, when we find that there is interest in the APL program. Our counselor would go to the site and test them by giving them the TABE (Test of Adult Basic Education); she determines which level -- either easy, medium, or difficult -- to give and then continue with the appropriate level for each student. Once that is completed and the test results are gotten back, the students are referred to come over to the APL program here, and we then give them an interest survey to find out what they are interested in studying, and we also proceed to give them one of the CAM -- the five content areas. At that point, we'll assess how they did and assign workbook pages that are appropriate if they do not score a Level 3 on all areas of the CAM. If they do score a Level 3, we'll take them right into doing their Life Skills.	The User begins to describe components: Component 1: Diagnosis Component 2: Prescription Component 3: Instruction Component 4: Evaluation
I: If they do not score as a Three, what do you do with them?	
U: If they do not score as a Level 3, on any part or objective on the CAM, then we would assign appropriate workbook pages, and the teacher would do a lot of individualized instruction with them.	
I: What type of instructional materials are you using?	

Interview	Comments
U: Right now we're using mostly APL materials, and we have a large resource pamphlet and community materials. We also make a lot of use of the local library, taking students up there to do research assignments, getting a little background information on topics that we feel they're having problems with. We are in the process now of developing a resource library which would have extra math and English books available to the student. Right now, 75-85% of the time we're just using APL workbooks. They have been able to accomplish the materials just by doing that.	Component 3: Instruction
I: How do you determine students' mastery of the material?	Component 4: Evaluation
U: Mastery is done through post-test and a lot of discussion with the instructors.	
I: What are you using for those post-tests?	Interviewer makes probes specific to component (or, probes for more specific information about post-tests).
U: For post-tests we readminister the CAM.	
I: So, the definition of mastery again is...	
U: Mastery would be to achieve a Level 3 on all objectives of the CAM.	
I: O.K., good. You mentioned the Life Skills earlier, saying that a person who did demonstrate this 3 Level would go into the Life Skills, not necessarily go into the instruction. Do you require each student, regardless of how she or he scores, to perform the Life Skills?	Interviewer switches focus to Life Skills
U: Yes. They must complete all of the 42 Life Skill objectives,	

Interview	Comments
U: prior to even being considered for the high school diploma program.	
I: Do you document each one of these?	
U: Yes, each one is documented through a Life Skills checklist. The instructor will initial it, as well as the assessor. Also, if they need discussions, or if the instructor meets with the student, that is also documented. Whereas, when we use resource people from the community -- we would ask that favor -- for instance, when a student goes to a bank to obtain information, we would ask for some documentation on bank stationery, saying that student has been there and has talked to the bank officer.	Component 5: Life Skills
I: Do you require each student to demonstrate competency in an individualized area also?	Interviewer changes focus to competencies.
U: Yes. Right now, since we are dealing exclusively with the Manpower training program, we are assessing on Occupational/Vocational competencies. That's the one area we're dealing with now. Hopefully, if we do branch out in the future, and do not have to deal exclusively with the Manpower program, we could assess on Academic and Homemaker.	Component 6: Individual Competency
I: O.K., how are you interfacing with your Manpower people? Are the teachers in those Manpower programs assessing the Occupational/Vocational competencies?	Probing for component variation on Component 6
U: Right now, the teachers and supervisors of students are. Well, we're going to ask them to. Right now we haven't had anyone who has totally completed the	

Interview	Comments
U: APL program. But as an update we call the teachers every so often to check on the progress of the student and document in our files, just a short, brief synopsis. At the end we are requiring them to complete a form, like an employer's-type questionnaire, a documentation of occupational performance of the student, so we will have some documentation of competencies. Plus, we are trying to get hold of the curriculum used in all the labs over there.	
I: So you will have a list then documenting what they've done in the occupational skills?	Interviewer checks how competencies are recorded.
U: Yes, documenting the number of hours spent obtaining such skills.	
I: Upon completion of the CBHSD program, what type of credential is awarded to the student?	Interviewer asks about outcome of program for student. Component 7: Certification
U: They would get a high school diploma from the Northern Lee High School District, signed by the superintendent. We also have a credential committee who would look over the portfolio and find that it had been completely and correctly done, including people from the county Vocational-Tech. school, county community college, and possibly other people from the community would be involved in it. It would be a complete review by this committee, and then the portfolio would be signed.	
I: Does it have to be unanimous? Does the whole committee have to accept the portfolio?	Interviewer asks for more information on credentials.

Interview	Comments
U: Right now we are thinking along those lines, that it would have to be.	
I: O.K., how many people are on the committee?	Interviewer checks for variation for Component 7: Certification.
U: We have approximately four people; we're thinking of getting more; we're not sure, depending on scheduling, etc.	
I: Right. Let me ask you this. You mentioned it was from Northern Lee High School District. Does the diploma say the school district, or is it a high school within the district?	Interviewer checks for variation for Component 7: Certification.
U: It says, "Northern Lee High School." The superintendent is very positive about the program.	
I: Excellent	
U: He's encouraged about it and is anxious to get that for students.	
I: That's marvelous. What do you see as the strengths and weaknesses of the CBHSD program in your situation?	Interviewer begins Levels of Use questions.
	This interview does not give sufficient information to check variations in Related Components 8 and 9. The Interviewer probes only on essential Components 1 through 7.

CONFIGURATION CHECKLIST
Adult Performance Level (APL) Project

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The APL Project is composed of two programs: 1) the APL Curriculum Program, and 2) the APL Competency-Based Diploma Program; therefore, "acceptability" is determined according to the program under consideration. When the APL Curriculum Program is implemented alone, Components 5, 6, and 7 are not applicable.

Component 1: Diagnosis

①		2
Students are diagnosed in skill areas of reading, language, and mathematics, and in content areas of Consumer Economics, Occupational Knowledge, Health, Community Resources and Government and Law.	* * *	Students are not diagnosed in all aforementioned skill and content areas.

Component 2: Prescription

①	2	3
All or most of student activities are based on the result of diagnosis.	* Some student activities are based on diagnostic results.	** No student activities are based on diagnostic results.

Component 3: Instruction

①	2
APL curriculum materials are used when appropriate. * * *	APL curriculum materials are not used even when appropriate.

Component 4: Evaluation

①	2	3
Students achieve mastery when they score APL 3 in each objective within each * * *	Assessment of mastery is sometimes according to APL requirements and sometimes according to other criteria.	Assessment of mastery is totally based on criteria other than APL requirements.

Component 5: Life Skills Performance

- | | | | | |
|--|--------------------|---|----------|--|
| <p>①</p> <p>Students are expected to provide evidence of satisfactory performance for each of the Life Skills.</p> | <p>*</p> <p>**</p> | <p>2</p> <p>Students are expected to perform all APL Life Skills, but evidence is not required.</p> | <p>3</p> | <p>Students are expected to perform some Life Skills, but not all.</p> |
| | | <p>4</p> | | |
| | | <p>Students are not expected to perform Life Skills.</p> | | |

Component 6: Individualized Competency Assessment

- | | | | | |
|---|----------|---|-----------|--|
| <p>1</p> <p>Each student must demonstrate an individualized competency in an area of his/her choice from among the given options.</p> | <p>*</p> | <p>②</p> <p>All students must demonstrate competency in an individualized area, but area is chosen by staff member (but still approved by student).</p> | <p>**</p> | <p>3</p> <p>Every student is not required to demonstrate an individualized competency.</p> |
|---|----------|---|-----------|--|

Component 7: Certification

- | | | |
|---|--|--|
| <p>①</p> <p>Upon satisfactory completion of CBHSD Program, graduates are awarded a regular high school diploma.</p> | <p>*</p> | <p>2</p> <p>Upon satisfactory completion of CBHSD Program, graduates are awarded an adult high school diploma.</p> |
| | | <p>3</p> |
| <p>**</p> | <p>Upon satisfactory completion of CBHSD Program, graduates are awarded a high school equivalency certificate.</p> | |

RELATED
COMPONENTS:

Component 8: Pacing

- | | | | | |
|--|----------|---|-----------|--|
| <p>1</p> <p>Students proceed at their own rate through APL materials and activities.</p> | <p>*</p> | <p>2</p> <p>Some student activities are self-paced and some are paced by teacher.</p> | <p>**</p> | <p>3</p> <p>Students proceed at pace set by teacher.</p> |
|--|----------|---|-----------|--|

Configuration Checklist -- APL Project Cont'd.

Related Components Cont'd.:

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Component 9: Teacher Role

1		2		3
Teacher acts as facilitator most, if not all of the time (responds and is available for help when needed).	*	Teacher acts largely as facilitator and also provides optional classroom instruction.		Teacher acts as facilitator some of the time and directs activities at other times.
		4		
	**	All instruction is directed by the teacher.		

CODE: To the left of * is ideal practice.
To the left of ** is acceptable practice.
To the right of ** is unacceptable practice; i.e., developer's "point of drastic mutation."

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